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AUTHORITY

SAMSO ltr, 16 Aug 1973

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SSD-CR-63-128
Supplement 2
MARTIN
DENVER

CONTRACT AF04(695)-150

**PROGRAM SUPPORT REQUEST
MOL-HSQ**

NOVEMBER 1965

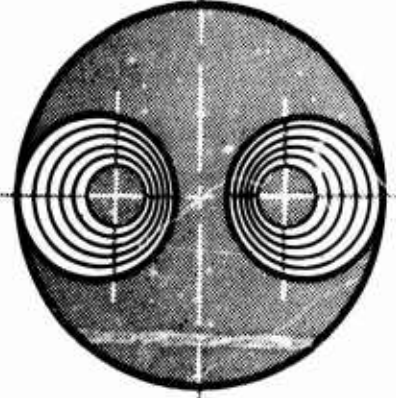
prepared by

MARTIN
DENVER

prepared for

**HEADQUARTERS
SPACE SYSTEMS DIVISION**

**AIR FORCE SYSTEMS COMMAND
AIR FORCE UNIT POST OFFICE
LOS ANGELES, CALIFORNIA 90045**



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1965
11/12/65
11/12/65
11/12/65

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SSD-CR-63-128 Supplement 2

Copy No. 8

Contract AF 04(695)-150

PROGRAM SUPPORT REQUEST
MOL - HSQ

November 1965

Author

W. Pilgrim

Approved



R. B. Demoret
Program Manager
MOL-HSQ

MARTIN COMPANY
Denver 1, Colorado
Aerospace Division of Martin-Marietta Corporation

FOREWORD

This document is submitted under item 1, Exhibit A, Task 5.13 of Contract AF 04(695)-150, in accordance with Line Item 3C-21 Contractor Specification SSS-TIII-O1O DRD (Rev 3), dated 15 April 1963 and SCN 1 thru DSCN 112.

This document defines the range support requirements for the MOL-HSQ Program.

This document is issued as a supplement to SSD-CR-63-128 (Line Item 1K-68).

(II)

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8. PROGRAM REQUIREMENT CODE 3900										9. DATED		10. PAGE DATE (DAY-MO-YEAR)	
11. PAGE NO.	12. ADDITIONAL PAGE NO.	13. PAGE TITLE	14. CLASS. S C U	15. PAGE DATE (DAY-MO-YEAR)	16. CHECK	17. PAGE NO.	18. ADDITIONAL PAGE NO.	19. PAGE TITLE	20. CLASS. S C U	21. PAGE DATE (DAY-MO-YEAR)			
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AFMTC FORM 30A-1
OCT 19

PREVIOUS EDITIONS OF THIS FORM
ARE OBSOLETE.

10. DATE OF ORIGINAL PAGE

1. SECURITY CLASSIFICATION (U)

9. Division no.

[illegible]

SYSTEM SECURITY CLASSIFICATION				7. SYSTEM CODE		8. CONTRACTOR		9. SECURITY CLASSIFICATION		10. SECURITY CLASSIFICATION		11. SECURITY CLASSIFICATION		12. SECURITY CLASSIFICATION		13. SECURITY CLASSIFICATION		14. SECURITY CLASSIFICATION		15. SECURITY CLASSIFICATION	
PROGRAM TITLE				PROGRAM REQUIREMENT CODE		SYSTEM CODE		CONTRACTOR		DATE		DATE		DATE		DATE		DATE		DATE	
TIII SLS/MOL-HSQ				3900				MC													
ITEM				S		C		U		OTHER		S		C		U		OTHER			
A. OVER-ALL PROGRAM																					
B. PRIME CONTRACTOR (CONNECTION WITH PROGRAM)																					
C. LISTS OF CONTRACTORS, ASSOCIATE CONTRACTORS AND/OR SUB-CONTRACTORS																					
ON TEST PROGRAM																					
D. PRODUCTION, PROCUREMENT, AND SUPPLY INFORMATION																					
E. TITLE OF R & D PROGRAM																					
F. TEST VEHICLE OR MISSILE NAME																					
G. TYPE DESIGNATION (BAL., SSM, SPACE, ETC.)																					
H. EXTERNAL CONFIGURATION																					
(1) VIEWED FROM OUTSIDE LAUNCH COMPLEX																					
(2) VIEWED FROM INSIDE LAUNCH COMPLEX																					
(3) VIEWED IN ASSEMBLY BUILDING																					
I. PHYSICAL CHARACTERISTICS (LEN., DIAM., ETC.)																					
J. Performance																					
K. COMBAT MEASURE INFORMATION, PROVEN AND UNPROVEN																					
L. TEST INITIATION DATE																					
M. TEST COMPLETION DATE																					
N. STATUS AND PROGRESS REPORTS																					
O. TEST AND PERFORMANCE INFORMATION																					
TYPE																					
DESCRIPTION																					
P. PROPULSION SYSTEM																					
TYPE																					
DESCRIPTION																					
Q. GUIDANCE SYSTEM																					
TYPE																					
DESCRIPTION																					
R. CONTROL SYSTEM																					
TYPE																					
DESCRIPTION																					
S. WARHEAD																					
TYPE																					
DESCRIPTION																					
T. NOSE CONE																					
TYPE																					
DESCRIPTION																					
U. CAPSULE																					
TYPE																					
DESCRIPTION																					
V. TARGETS																					
TYPE																					
DESCRIPTION																					
W. OTHER																					
DESCRIPTION																					
X. DRAWINGS, SKETCHES, PHOTOGRAPHS, EXTERNAL OR INTERNAL VIEWS, AND DESIGN INFORMATION. (Including engineering notes, computations and models of mock-ups relative to systems of missile)																					
(1) PROPULSION SYSTEMS																					
(2) CONTROL AND GUIDANCE SYSTEM																					
(3) WARHEAD																					
(4) NOSE CONE																					
(5) CAPSULE																					
(6) TARGETS																					
(7)																					
Y. OPERATION READINESS DATE																					
Z. COMBAT READINESS DATE																					
AA. INSTRUMENTATION (INTERNAL)																					
BB. INSTRUMENTATION (EXTERNAL)																					
CC. TRAINING EQUIPMENT																					
DD. GROUND SUPPORT EQUIPMENT																					
EE. RAW DATA																					
FF. REDUCED DATA																					
GG. TECHNICAL PUBLICATIONS																					
HH.																					
II.																					
*System performance is unclassified except for injection accuracy which reveals guidance accuracy capability of WS 107A. When injection accuracy is specifically stated or can be deduced, the information is secret.																					
12. SECURITY GUIDES (1) AND DOCUMENTS (1)																					
Security Classified Guide, Program 624A, Standard Launch Vehicle 5, dated 1 April 1964 (Rev. 5, dated 23 July 1965)																					
13. CONFIRMATION - OFFICE SECURITY ADVISOR																					



AFMTC FORM 308 SEP 65 PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

1. SECURITY CLASSIFICATION (U)

2. REVISION NO.

TECHNICAL REFERENCES										1. SECURITY CLASSIFICATION		2. PAGE	
3. PROGRAM TITLE				4. PROGRAM REQUIREMENT CODE		5. SYSTEM CODE		6. CONTRACTOR		7. DATE			
TIII SLS/MOL-ESQ				3900				MC		12 NOV, 1965			
8. PROD PAGE REFERENCE				9. CLASS		10. PUBLISHER AND DATE		11. SOURCE		12. DATED			
				S C U									
150				x		6555th Aerospace Test Wing		6555th Aerospace Test Wing					
410, 411, 412, 420, 431.4, 432.2, 433.1, 434.1				x		Martin Company		SSD					
050				x		Headquarters Space System Division		SSD (SSAS)					
152.1.1				x		Martin Company		SSD					
130, 140				x		Martin Company, (Oct. 1965)		SSD					

SPECIAL ABBREVIATIONS AND NOMENCLATURE				1. SECURITY CLASSIFICATION		2. PAGE 979
				(U)		3. DATE 12 NOV. 1965
5. TEST PROGRAM		6. PROGRAM REQUIREMENT NO. 3900		7. SYSTEM CODE		4. REPLACES PAGE(S)
TIII SLS/MOL-HSQ				8. CONTRACTOR		5. DATED
10. WORD OR ABBREVIATION		11. DEFINITION OR MEANING				
HSQ		Heat Shield Qualification Flight Test				
MOL		Manned Orbiting Laboratory				
MAC		McDonnell Aircraft Company				
MC		Martin Company				



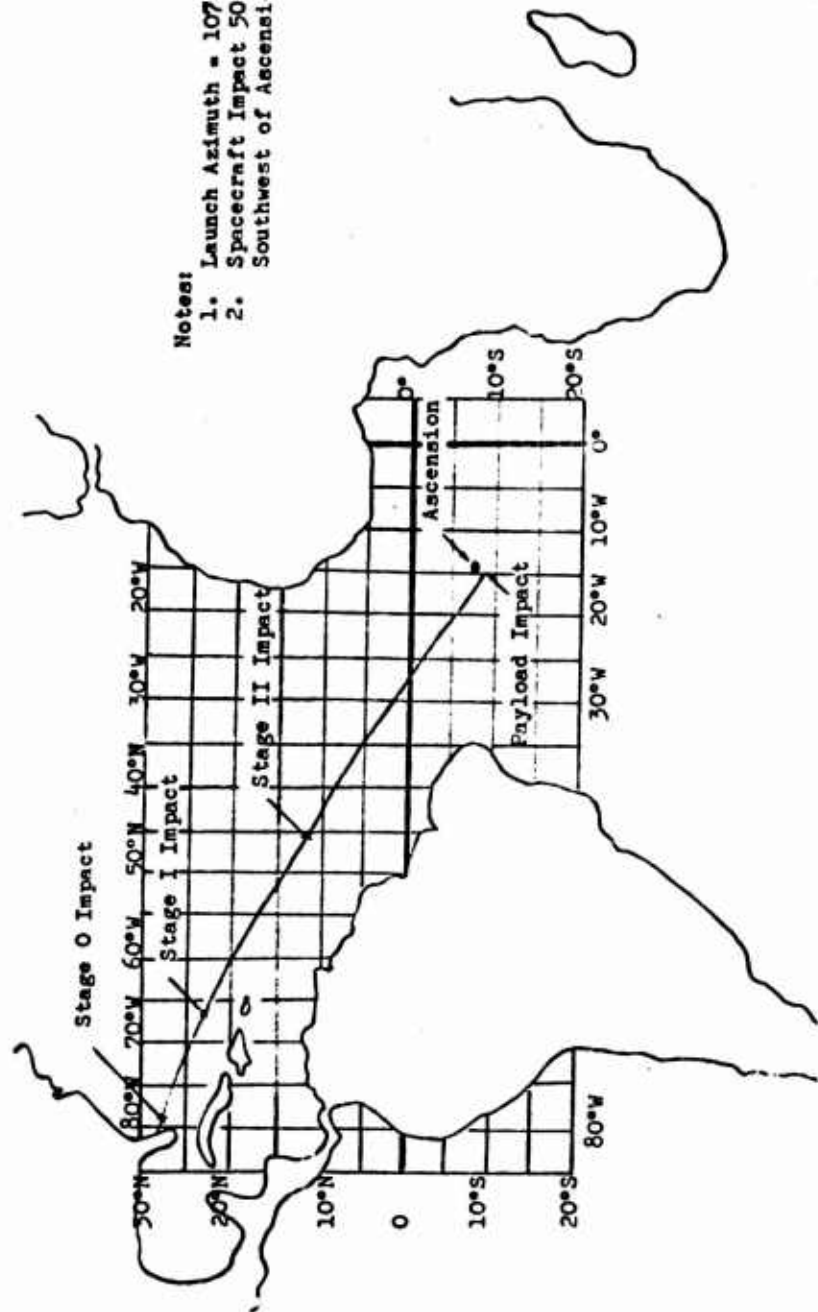
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PROGRAM OBJECTIVES				1. SECURITY CLASSIFICATION UNCLASSIFIED		2. PAGE 130.	
6. TEST PROGRAM TIII SLS/MOL-HSQ				7. SYSTEM CODE		3. DATE 12 NOV. 1965	
8. PROGRAM REQUIREMENT NO. 3900				9. CONTRACTOR MC/MAC		4. REPLACES PAGE(S)	
12. CATEGORY 12.				10. DATED		11. TEST AGENCY	
10. TEST ITEM NO.	11. TEST CODE	12. CATEGORY 12.	TEST OBJECTIVES				
1	HSQ	X	Verify the Gemini heat shield as modified to accommodate the MOL crew-transfer method				
2	HSQ	X	Collect data on ascent environment for the payload vehicle structure				
3	HSQ	X	Demonstrate structural integrity and control capability of the Titan IIIC for launch and ascent with a MOL-type payload				
4	HSQ	X	Demonstrate the MOL outboard profile compatibility with the ITL concept				
5	HSQ	X	Demonstrate recovery/retrieval techniques				
6	HSQ	X	Exercise selected segments of the MOL tracking network				



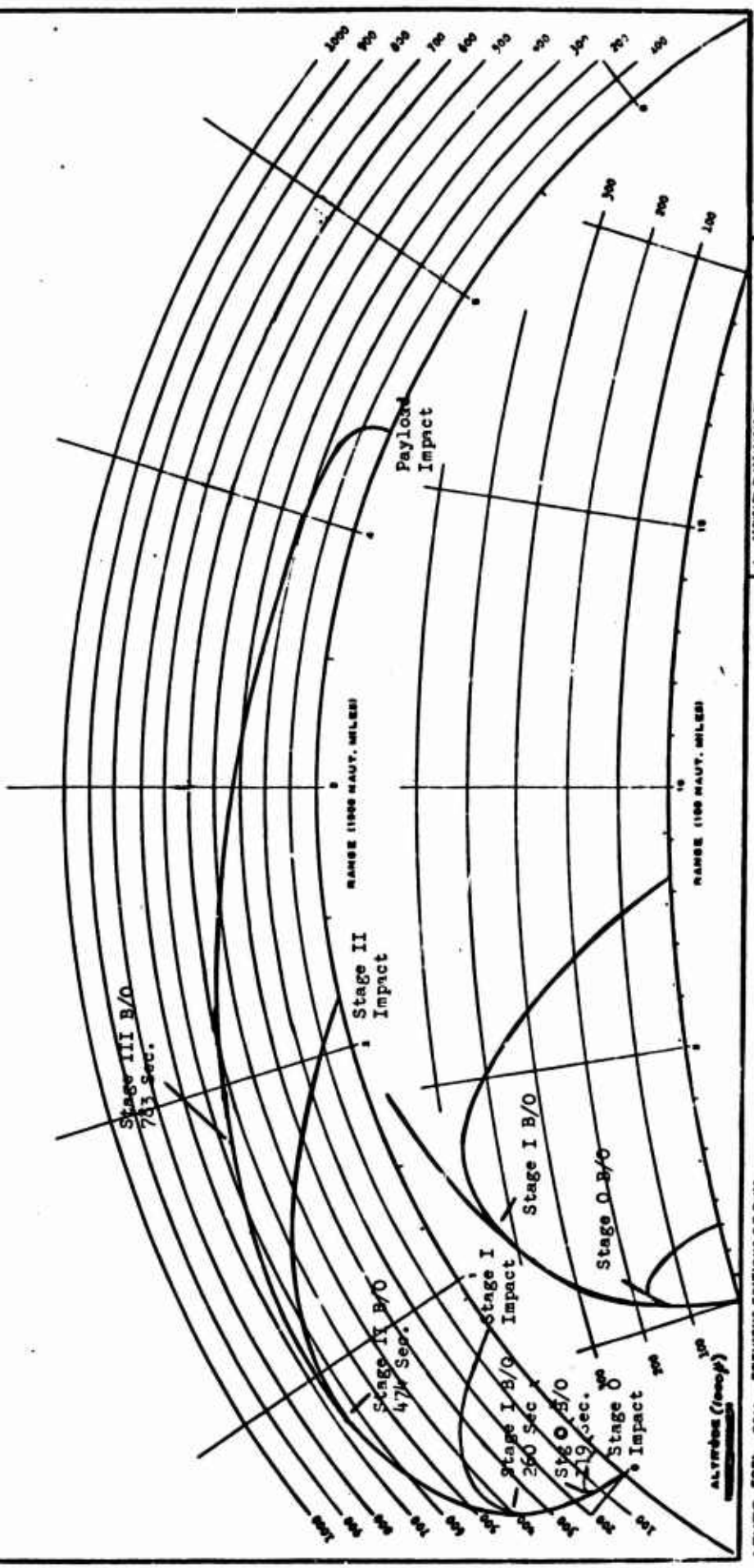
PROGRAM DESCRIPTION				1. SECURITY CLASSIFICATION UNCLASSIFIED		2. PAGE 146	
5. TEST PROGRAM TIII SLS/MOL-HSQ				6. PROGRAM REQUIREMENT NO. 3900		3. DATE 12 NOV. 1965	
7. ARDC SYSTEM CODE				8. CONTRACTOR MC/MAC		4. REPLACES PAGE(S)	
12. TEST DESCRIPTION				13. HOURS/TEST USER RANGE		14. TEST LOCATION	
11. TEST NO. CODE	1. HSQ	A Titan IIIC launch vehicle with minor modifications to enable spacecraft separation and integrated countdown will be launched from Eastern Test Range (ETR). This Heat Shield Qualification (HSQ) flight is suborbital with a launch azimuth of 107.5deg. The flight vehicle is comprised of a simulated laboratory, fabricated from a Titan II, Stage I oxidizer tank to approximate outboard profile, mass properties, and structural characteristics of the anticipated MOL laboratory and furnished with an independent telemetry system; a Gemini Spacecraft, refurbished GT-2 previously flown to qualify Gemini A heat shield. This spacecraft has a "boilerplate" adapter to mate it to the Simulated Laboratory and active systems to enable separation, reentry, recovery and acquisition of pertinent experimental data during all flight phases.		4	4		
2	T	Airborne Instrumentation Test consists of open loop and closed loop radiation test of Launch Vehicle/Gemini tracking equipment.		4	4	Complex 40	
AFMTC FORM 31E MAR 61 PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.				1. SECURITY CLASSIFICATION UNCLASSIFIED		5. REVISION NO. NY	

TRAJECTORY DATA - PLAN VIEW				1. SECURITY CLASSIFICATION (U)	2. PAGE 141
3. PROGRAM TITLE TIII SLS/MOL-HSQ	4. PROGRAM IDENTIFICATION CODE 3900	5. SYSTEM CODE	6. CONTRIBUTOR MAC	7. DATE 12 NOV. 1965	8. REPLACES PAGE(S)
10. PLAN VIEW (INCLUDING LAUNCH AZIMUTH AND IMPACT POINT(S) OF TEST VEHICLE OR MISSILE STAGES).				DATED	TEST CODE HSQ



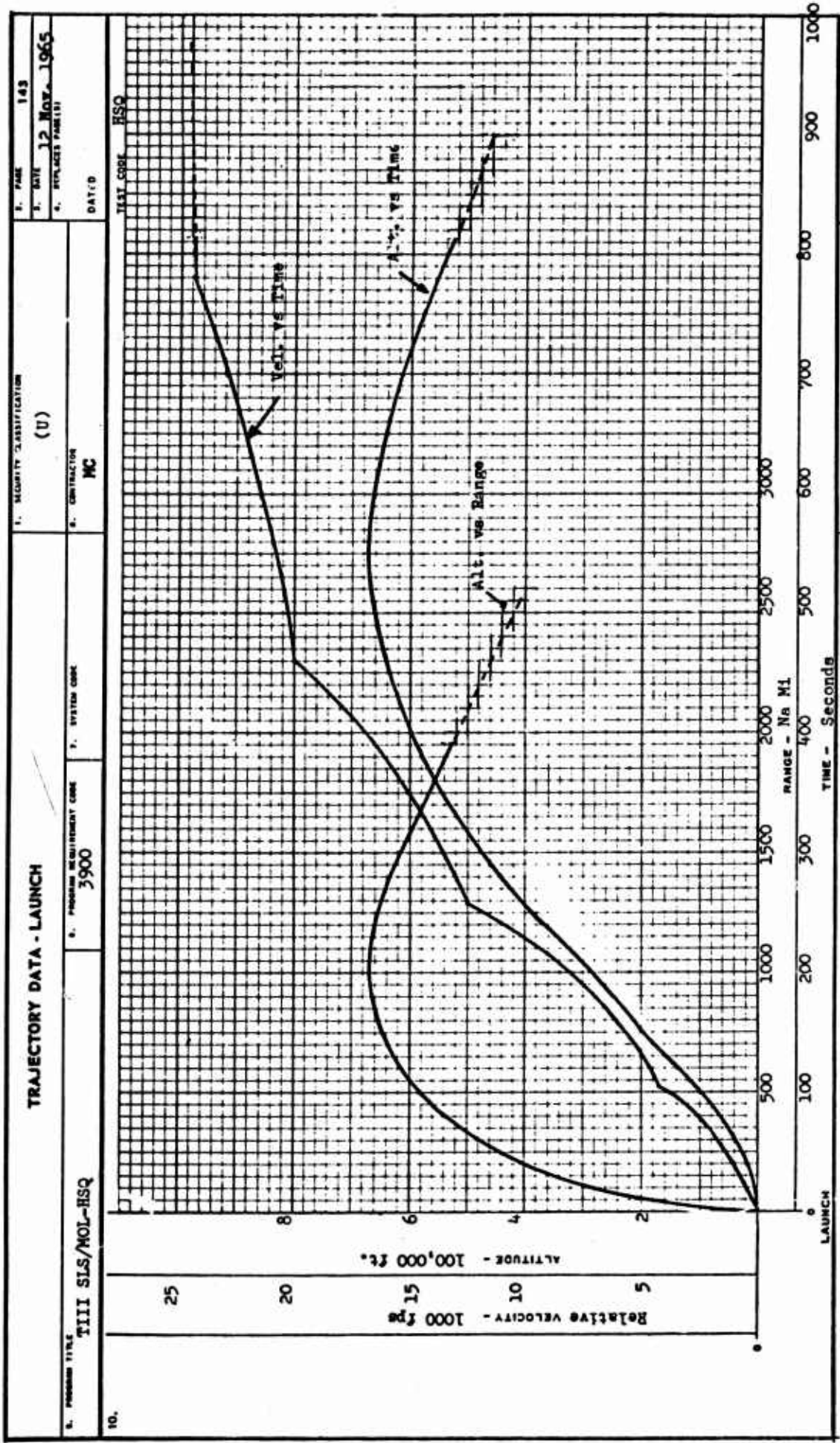
Notes:
 1. Launch Azimuth = 107.5 degrees
 2. Spacecraft Impact 50 n. mi. Southwest of Ascension Island.

TRAJECTORY DATA - FULL RANGE		1. SECURITY CLASSIFICATION (U)		2. PAGE 142
3. PLANNED TRAJECTORY(S) (INCLUDING BURSTOUT, SEPARATION AND IMPACT POINT(S) OF TEST VEHICLE OR MISSILE STAGE(S))		4. CONTRACTOR MC/MAC		5. DATE 12 NOV. 1955
6. PROGRAM TITLE TIII SLS/MOL-HSQ	7. PROGRAM REQUIREMENT CODE 3900	8. SYSTEM CODE	9. DATED	
10. TEST CODE HSQ				



AFMTC FORM 31H JUN 51 PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

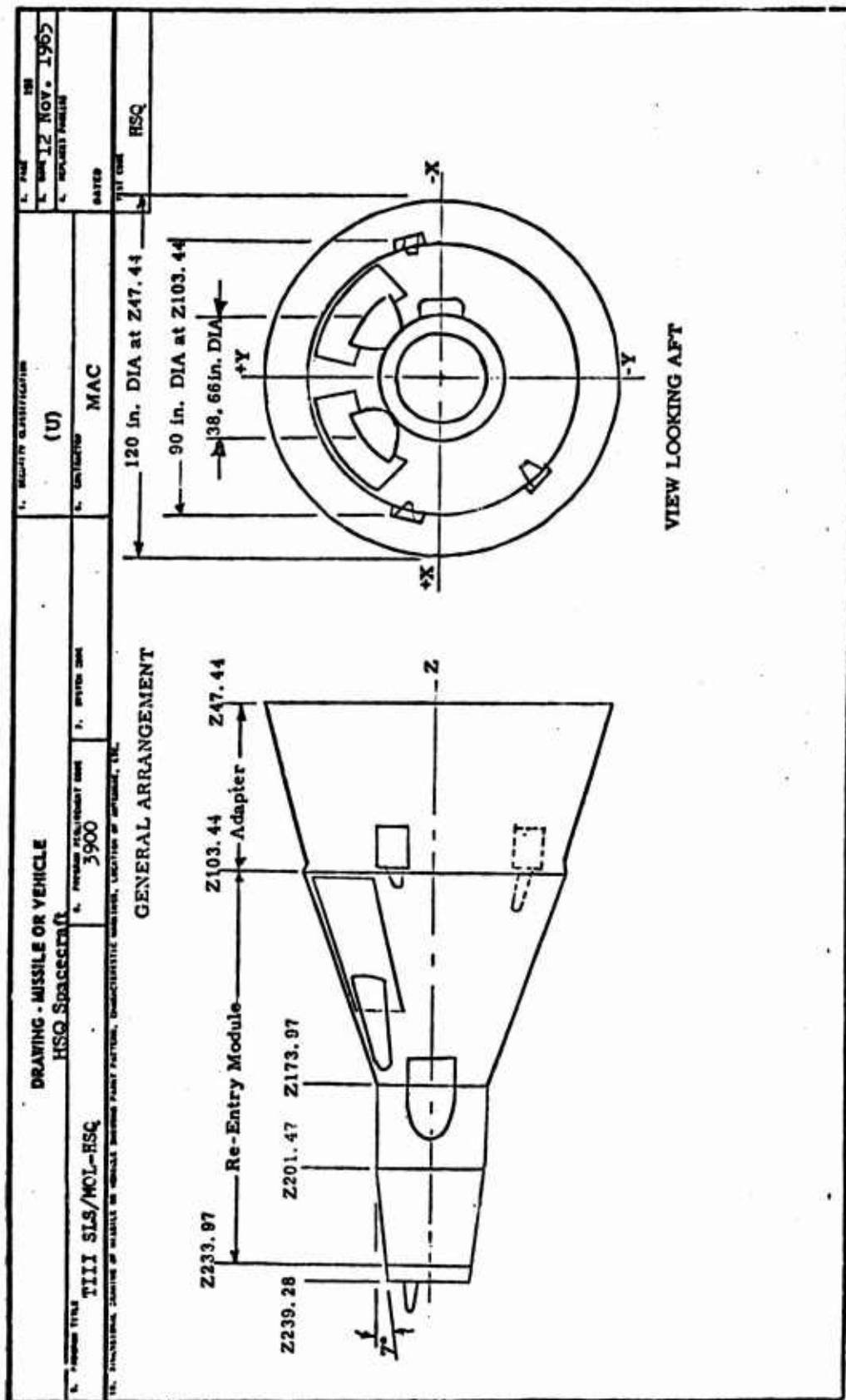
1. SECURITY CLASSIFICATION
(U)

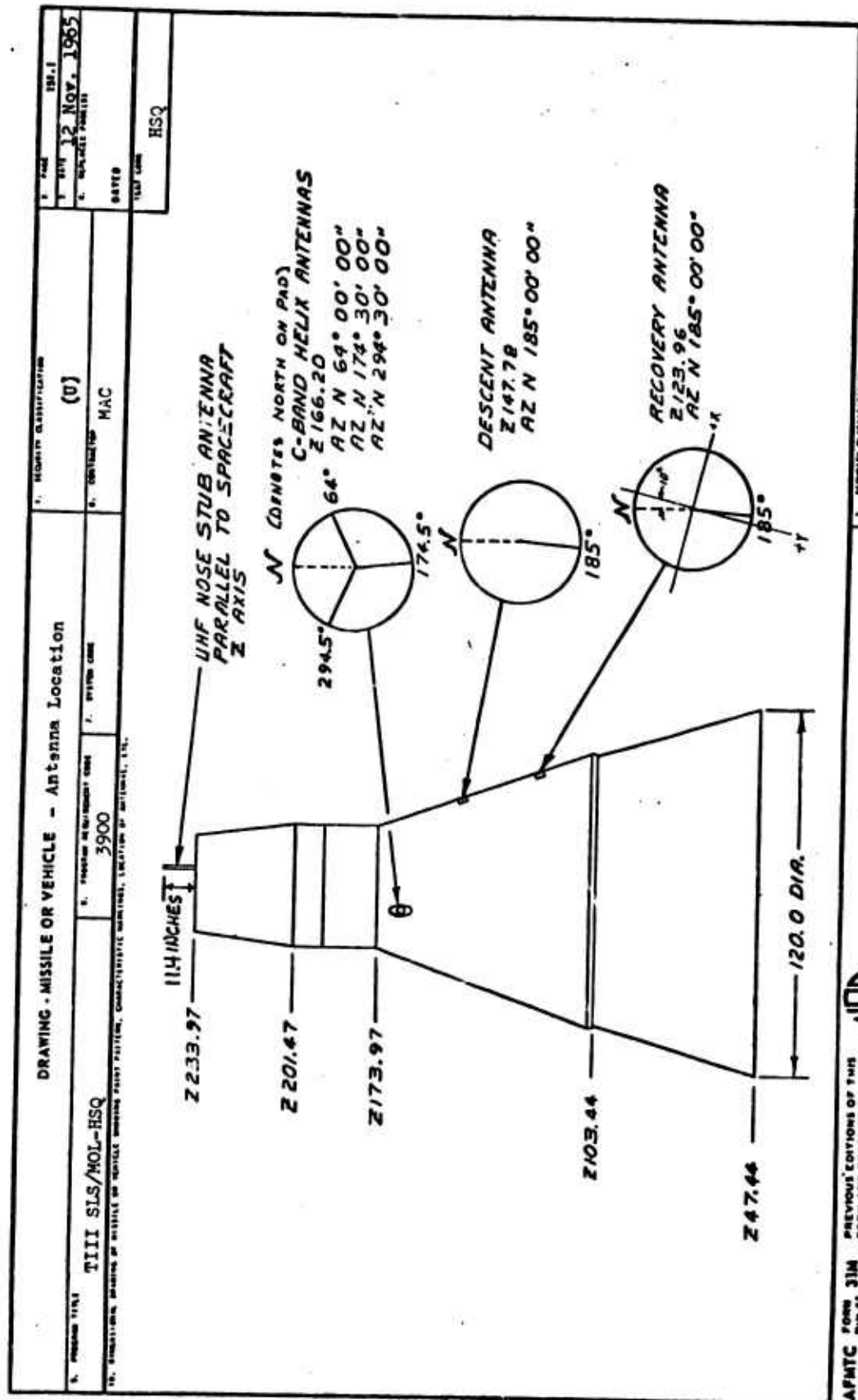


TRAJECTORY DATA - TERMINAL		1. SECURITY CLASSIFICATION (U)		4. NAME 148	
5. PROGRAM FILE# TIII \$LS/MOL-HSQ		6. PROGRAM IDENTIFICATION CODE 3900		7. SYSTEM CODE	
8. DATE 12 Nov. 1965		9. SECURITY CLASSIFICATION (U)		10. TEST CODE HSQ	
11. DEGREES (TRUE NORTH) 123.8		12. IMPACT POINT, 14.91°W LONGITUDE, 1953 SEC TIME		13. ALTITUDE - 100,000 Ft.	
14. ALTITUDE - 100,000 Ft.		15. ALTITUDE - 100,000 Ft.		16. ALTITUDE - 100,000 Ft.	
17. ALTITUDE - 100,000 Ft.		18. ALTITUDE - 100,000 Ft.		19. ALTITUDE - 100,000 Ft.	
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62. ALTITUDE - 100,000 Ft.		63. ALTITUDE - 100,000 Ft.		64. ALTITUDE - 100,000 Ft.	
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83. ALTITUDE - 100,000 Ft.		84. ALTITUDE - 100,000 Ft.		85. ALTITUDE - 100,000 Ft.	
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89. ALTITUDE - 100,000 Ft.		90. ALTITUDE - 100,000 Ft.		91. ALTITUDE - 100,000 Ft.	
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95. ALTITUDE - 100,000 Ft.		96. ALTITUDE - 100,000 Ft.		97. ALTITUDE - 100,000 Ft.	
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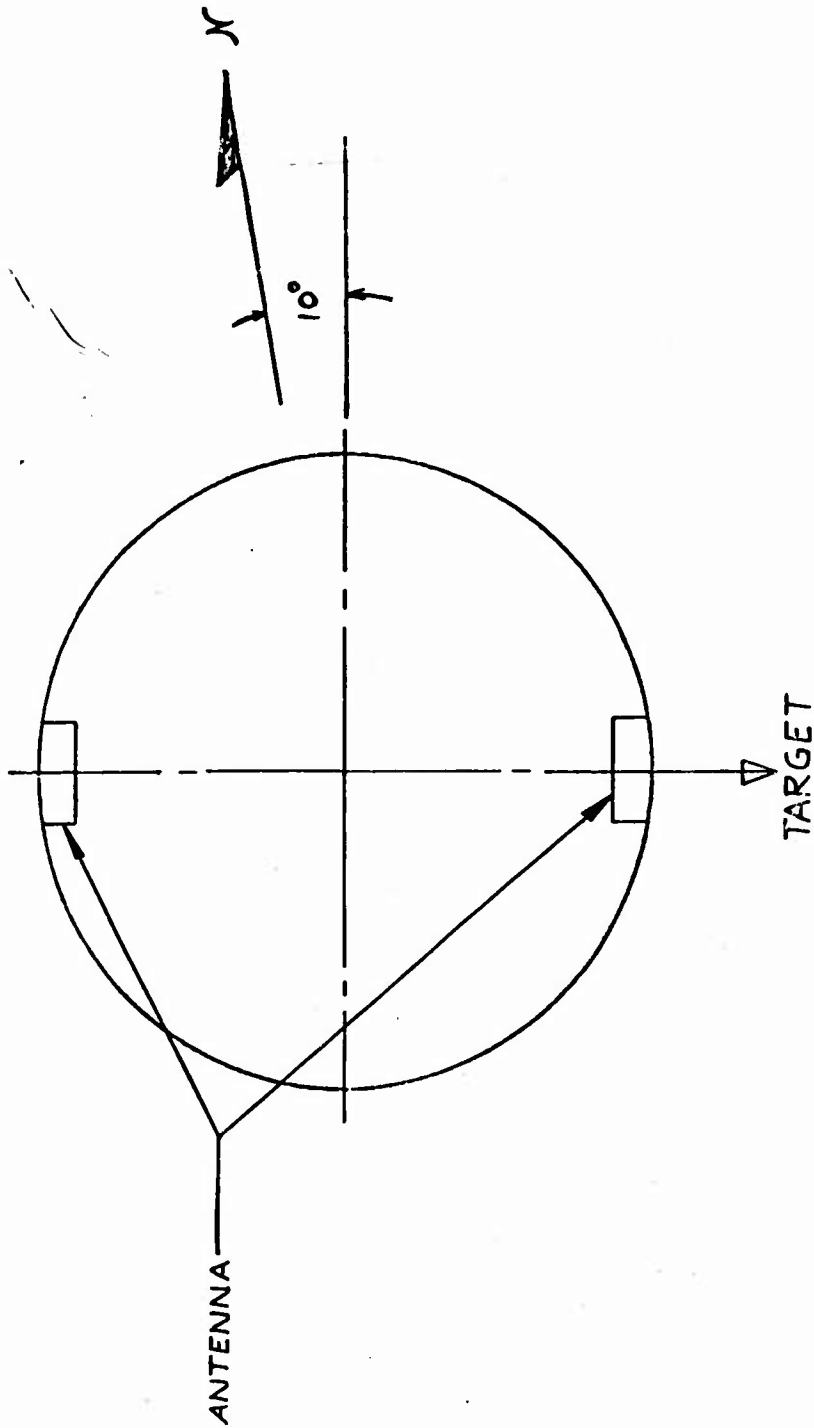
TEST VEHICLE DESCRIPTION										1. SECURITY CLASSIFICATION UNCLASSIFIED		2. PAGE 150.	
3. TEST PROGRAM TIII SLS/MOL-HSQ		6. PROGRAM REQUIREMENT NO. 3900		7. SYSTEM CODE		8. CONTRACTOR MC		9. DATED		3. DATE 12 Nov. 1965			
10. TEST CODE & SERIES HSQ		11. TEST VEHICLE NAME Simulated Lab		12. <input type="checkbox"/> SPACE <input checked="" type="checkbox"/> BALLISTIC <input type="checkbox"/> CRUISE		13. TYPE & DESIGNATION N/A		14. LAUNCHER DESCRIPTION Pad 40 - See Titan III space launching system PRD 3700 pages 1020.1		4. REPLACES PAGE(S)			
15. LAUNCH AZIMUTH-DEG. T. 107.5		16. LAUNCH ELEVATION-DEG. T. 90°		17. TRAJECTORY AZIMUTH-DEG. T.		18. TYPE & DESIGNATION N/A		19. TYPE & DESIGNATION N/A		5. TYPE IN NAME OR NUMBER OF STAGE OR PHASE.			
19. CHARACTERISTIC PER STAGE		TOTAL		(1)		(2)		(3)		(4)			
20. PHYSICAL DIMENSIONS - FT		A. LENGTH		33.7		B. DIAMETER		10		C. WIDTH - MAX			
19. WEIGHTS - POUNDS		A. DRY (EMPTY - NO FUEL)		13,795		B. PROPELLANT OR FUEL				C. OXIDIZER			
20. PROPELLANT SYSTEM		A. TYPE ENGINE				B. MANUFACTURER				C. DESIGNATION			
21. PROPELLANTS & GASES		A. PROPELLANT OR FUEL				B. OXIDIZER				C. GASES			
22. PERFORMANCE		A. RANGE -				B. ALTITUDE -				C. MAX. VELOCITY -			
23. LAUNCHER DESCRIPTION		A. TYPE ENGINE				B. MANUFACTURER				C. DESIGNATION			
24. GUIDANCE SYSTEM (TYPE & DESCRIPTION)		A. TYPE ENGINE				B. MANUFACTURER				C. DESIGNATION			
25. NOTES:		A. TYPE ENGINE				B. MANUFACTURER				C. DESIGNATION			
26. TYPE IN NAME OR NUMBER OF STAGE OR PHASE.		A. TYPE ENGINE				B. MANUFACTURER				C. DESIGNATION			
27. TYPE IN NAME OR NUMBER OF STAGE OR PHASE.		A. TYPE ENGINE				B. MANUFACTURER				C. DESIGNATION			
28. TYPE IN NAME OR NUMBER OF STAGE OR PHASE.		A. TYPE ENGINE				B. MANUFACTURER				C. DESIGNATION			
29. TYPE IN NAME OR NUMBER OF STAGE OR PHASE.		A. TYPE ENGINE				B. MANUFACTURER				C. DESIGNATION			
30. TYPE IN NAME OR NUMBER OF STAGE OR PHASE.		A. TYPE ENGINE				B. MANUFACTURER				C. DESIGNATION			
31. TYPE IN NAME OR NUMBER OF STAGE OR PHASE.		A. TYPE ENGINE				B. MANUFACTURER				C. DESIGNATION			
32. TYPE IN NAME OR NUMBER OF STAGE OR PHASE.		A. TYPE ENGINE				B. MANUFACTURER				C. DESIGNATION			
33. TYPE IN NAME OR NUMBER OF STAGE OR PHASE.		A. TYPE ENGINE				B. MANUFACTURER				C. DESIGNATION			
34. TYPE IN NAME OR NUMBER OF STAGE OR PHASE.		A. TYPE ENGINE				B. MANUFACTURER				C. DESIGNATION			
35. TYPE IN NAME OR NUMBER OF STAGE OR PHASE.		A. TYPE ENGINE				B. MANUFACTURER				C. DESIGNATION			
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38. TYPE IN NAME OR NUMBER OF STAGE OR PHASE.		A. TYPE ENGINE				B. MANUFACTURER				C. DESIGNATION			
39. TYPE IN NAME OR NUMBER OF STAGE OR PHASE.		A. TYPE ENGINE				B. MANUFACTURER				C. DESIGNATION			
40. TYPE IN NAME OR NUMBER OF STAGE OR PHASE.		A. TYPE ENGINE				B. MANUFACTURER				C. DESIGNATION			
41. TYPE IN NAME OR NUMBER OF STAGE OR PHASE.		A. TYPE ENGINE				B. MANUFACTURER				C. DESIGNATION			
42. TYPE IN NAME OR NUMBER OF STAGE OR PHASE.		A. TYPE ENGINE				B. MANUFACTURER				C. DESIGNATION			
43. TYPE IN NAME OR NUMBER OF STAGE OR PHASE.		A. TYPE ENGINE				B. MANUFACTURER				C. DESIGNATION			
44. TYPE IN NAME OR NUMBER OF STAGE OR PHASE.		A. TYPE ENGINE				B. MANUFACTURER				C. DESIGNATION			
45. TYPE IN NAME OR NUMBER OF STAGE OR PHASE.		A. TYPE ENGINE				B. MANUFACTURER				C. DESIGNATION			
46. TYPE IN NAME OR NUMBER OF STAGE OR PHASE.		A. TYPE ENGINE				B. MANUFACTURER				C. DESIGNATION			
47. TYPE IN NAME OR NUMBER OF STAGE OR PHASE.		A. TYPE ENGINE				B. MANUFACTURER				C. DESIGNATION			
48. TYPE IN NAME OR NUMBER OF STAGE OR PHASE.		A. TYPE ENGINE				B. MANUFACTURER				C. DESIGNATION			
49. TYPE IN NAME OR NUMBER OF STAGE OR PHASE.		A. TYPE ENGINE				B. MANUFACTURER				C. DESIGNATION			
50. TYPE IN NAME OR NUMBER OF STAGE OR PHASE.		A. TYPE ENGINE				B. MANUFACTURER				C. DESIGNATION			
51. TYPE IN NAME OR NUMBER OF STAGE OR PHASE.		A. TYPE ENGINE				B. MANUFACTURER				C. DESIGNATION			
52. TYPE IN NAME OR NUMBER OF STAGE OR PHASE.		A. TYPE ENGINE				B. MANUFACTURER				C. DESIGNATION			
53. TYPE IN NAME OR NUMBER OF STAGE OR PHASE.		A. TYPE ENGINE				B. MANUFACTURER				C. DESIGNATION			
54. TYPE IN NAME OR NUMBER OF STAGE OR PHASE.		A. TYPE ENGINE				B. MANUFACTURER				C. DESIGNATION			
55. TYPE IN NAME OR NUMBER OF STAGE OR PHASE.		A. TYPE ENGINE				B. MANUFACTURER				C. DESIGNATION			
56. TYPE IN NAME OR NUMBER OF STAGE OR PHASE.		A. TYPE ENGINE				B. MANUFACTURER				C. DESIGNATION			
57. TYPE IN NAME OR NUMBER OF STAGE OR PHASE.		A. TYPE ENGINE				B. MANUFACTURER				C. DESIGNATION			
58. TYPE IN NAME OR NUMBER OF STAGE OR PHASE.		A. TYPE ENGINE				B. MANUFACTURER				C. DESIGNATION			
59. TYPE IN NAME OR NUMBER OF STAGE OR PHASE.		A. TYPE ENGINE				B. MANUFACTURER				C. DESIGNATION			
60. TYPE IN NAME OR NUMBER OF STAGE OR PHASE.		A. TYPE ENGINE				B. MANUFACTURER				C. DESIGNATION			
61. TYPE IN NAME OR NUMBER OF STAGE OR PHASE.		A. TYPE ENGINE				B. MANUFACTURER				C. DESIGNATION			
62. TYPE IN NAME OR NUMBER OF STAGE OR PHASE.		A. TYPE ENGINE				B. MANUFACTURER				C. DESIGNATION			
63. TYPE IN NAME OR NUMBER OF STAGE OR PHASE.		A. TYPE ENGINE				B. MANUFACTURER				C. DESIGNATION			
64. TYPE IN NAME OR NUMBER OF STAGE OR PHASE.		A. TYPE ENGINE				B. MANUFACTURER				C. DESIGNATION			
65. TYPE IN NAME OR NUMBER OF STAGE OR PHASE.		A. TYPE ENGINE				B. MANUFACTURER				C. DESIGNATION			
66. TYPE IN NAME OR NUMBER OF STAGE OR PHASE.		A. TYPE ENGINE				B. MANUFACTURER				C. DESIGNATION			
67. TYPE IN NAME OR NUMBER OF STAGE OR PHASE.		A. TYPE ENGINE				B. MANUFACTURER				C. DESIGNATION			
68. TYPE IN NAME OR NUMBER OF STAGE OR PHASE.		A. TYPE ENGINE				B. MANUFACTURER				C. DESIGNATION			
69. TYPE IN NAME OR NUMBER OF STAGE OR PHASE.		A. TYPE ENGINE				B. MANUFACTURER				C. DESIGNATION			
70. TYPE IN NAME OR NUMBER OF STAGE OR PHASE.		A. TYPE ENGINE				B. MANUFACTURER				C. DESIGNATION			
71. TYPE IN NAME OR NUMBER OF STAGE OR PHASE.		A. TYPE ENGINE				B. MANUFACTURER				C. DESIGNATION			
72. TYPE IN NAME OR NUMBER OF STAGE OR PHASE.		A. TYPE ENGINE				B. MANUFACTURER				C. DESIGNATION			
73. TYPE IN NAME OR NUMBER OF STAGE OR PHASE.		A. TYPE ENGINE				B. MANUFACTURER				C. DESIGNATION			
74. TYPE IN NAME OR NUMBER OF STAGE OR PHASE.		A. TYPE ENGINE				B. MANUFACTURER				C. DESIGNATION			
75. TYPE IN NAME OR NUMBER OF STAGE OR PHASE.		A. TYPE ENGINE				B. MANUFACTURER				C. DESIGNATION			
76. TYPE IN NAME OR NUMBER OF STAGE OR PHASE.		A. TYPE ENGINE				B. MANUFACTURER				C. DESIGNATION			
77. TYPE IN NAME OR NUMBER OF STAGE OR PHASE.		A. TYPE ENGINE				B. MANUFACTURER				C. DESIGNATION			
78. TYPE IN NAME OR NUMBER OF STAGE OR PHASE.		A. TYPE ENGINE				B. MANUFACTURER				C. DESIGNATION			
79. TYPE IN NAME OR NUMBER OF STAGE OR PHASE.		A. TYPE ENGINE				B. MANUFACTURER				C. DESIGNATION			
80. TYPE IN NAME OR NUMBER OF STAGE OR PHASE.		A. TYPE ENGINE				B. MANUFACTURER				C. DESIGNATION			
81. TYPE IN NAME OR NUMBER OF STAGE OR PHASE.		A. TYPE ENGINE				B. MANUFACTURER				C. DESIGNATION			
82. TYPE IN NAME OR NUMBER OF STAGE OR PHASE.		A. TYPE ENGINE				B. MANUFACTURER				C. DESIGNATION			
83. TYPE IN NAME OR NUMBER OF STAGE OR PHASE.		A. TYPE ENGINE				B. MANUFACTURER				C. DESIGNATION			
84. TYPE IN NAME OR NUMBER OF STAGE OR PHASE.		A. TYPE ENGINE				B. MANUFACTURER				C. DESIGNATION			
85. TYPE IN NAME OR NUMBER OF STAGE OR PHASE.		A. TYPE ENGINE				B. MANUFACTURER				C. DESIGNATION			
86. TYPE IN NAME OR NUMBER OF STAGE OR PHASE.		A. TYPE ENGINE				B. MANUFACTURER				C. DESIGNATION			
87. TYPE IN NAME OR NUMBER OF STAGE OR PHASE.		A. TYPE ENGINE				B. MANUFACTURER				C. DESIGNATION			
88. TYPE IN NAME OR NUMBER OF STAGE OR PHASE.		A. TYPE ENGINE				B. MANUFACTURER				C. DESIGNATION			
89. TYPE IN NAME OR NUMBER OF STAGE OR PHASE.		A. TYPE ENGINE				B. MANUFACTURER				C. DESIGNATION			
90. TYPE IN NAME OR NUMBER OF STAGE OR PHASE.		A. TYPE ENGINE				B. MANUFACTURER				C. DESIGNATION			
91. TYPE IN NAME OR NUMBER OF STAGE OR PHASE.		A. TYPE ENGINE				B. MANUFACTURER				C. DESIGNATION			
92. TYPE IN NAME OR NUMBER OF STAGE OR PHASE.		A. TYPE ENGINE				B. MANUFACTURER				C. DESIGNATION			
93. TYPE IN NAME OR NUMBER OF STAGE OR PHASE.		A. TYPE ENGINE				B. MANUFACTURER				C. DESIGNATION			
94. TYPE IN NAME OR NUMBER OF STAGE OR PHASE.		A. TYPE ENGINE				B. MANUFACTURER				C. DESIGNATION			
95. TYPE IN NAME OR NUMBER OF STAGE OR PHASE.		A. TYPE ENGINE				B. MANUFACTURER				C. DESIGNATION			
96. TYPE IN NAME OR NUMBER OF STAGE OR PHASE.		A. TYPE ENGINE				B. MANUFACTURER				C. DESIGNATION			
97. TYPE IN NAME OR NUMBER OF STAGE OR PHASE.		A. TYPE ENGINE				B. MANUFACTURER				C. DESIGNATION			
98. TYPE IN NAME OR NUMBER OF STAGE OR PHASE.		A. TYPE ENGINE				B. MANUFACTURER				C. DESIGNATION			
99. TYPE IN NAME OR NUMBER OF STAGE OR PHASE.		A. TYPE ENGINE				B. MANUFACTURER				C. DESIGNATION			
100. TYPE IN NAME OR NUMBER OF STAGE OR PHASE.		A. TYPE ENGINE				B. MANUFACTURER				C. DESIGNATION			

Gemini Spacecraft		TEST VEHICLE DESCRIPTION				1. SECURITY CLASSIFICATION (U)		2. PAGE 150.1	
5. TEST PROGRAM TIU SLS/MOL-HSQ		6. PROGRAM REQUIREMENT NO. 3900		7. SYSTEM CODE		8. CONTRACTOR MAC		3. DATE 12 NOV. 1965 4. REPLACES PAGE(S)	
10. TEST CODE & SERIES HSQ		11. TEST VEHICLE NAME GEMINI B HSQ S/C		12. <input type="checkbox"/> SPACE <input checked="" type="checkbox"/> BALLISTIC <input type="checkbox"/> SATELLITE <input type="checkbox"/> CRUISE		13. TYPE & DESIGNATION N/A		DATED	
14. LAUNCH AZIMUTH-DEG. T. 107.5		15. LAUNCH ELEVATION-DEGREES 90°		16. TRAJECTORY AZIMUTH-DEG. T.		17.		22. LAUNCHER DESCRIPTION	
18. CHARACTERISTIC PER STAGE		TOTAL		(11) Launch		(12) Re-entry		(13) Landing	
19. PHYSICAL DIMENSIONS - FT		16.5		10/3.22		16.5		12.6	
A. LENGTH		16.5		10/3.22		16.5		12.6	
B. DIAMETER		10/3.22		10/3.22		10/3.22		7.5/3.22	
C. WIDTH - MAX		10/3.22		10/3.22		10/3.22		7.5/3.22	
20. WEIGHTS - POUNDS (1)		6333 (4)		6333 (4)		4646 (4)		4247 (4)	
A. DRY (EMPTY - NO FUEL)		31.6		31.6		31.6		8	
B. PROPELLANT OR FUEL		40.4		40.4		40.4		10	
C. OXIDIZER		N2-2.8		N2-2.8		N2-2.8		N2-2.8	
D. GASES		17.6 (1)		17.6 (1)		14.6 (1)		14.6 (1)	
E. MISCELLANEOUS		52 (3)		52 (3)		42 (3)		33 (3)	
F. DESTRUCT MATERIAL		6405 (4)		6405 (4)		4718 (4)		4265 (4)	
G. LAUNCH									
H. BURNOUT									
21. PROPELLSION SYSTEM		RCS (2)		RCS (2)		LIQUID			
A. TYPE ENGINE						ROCKETDYNE			
B. MANUFACTURER						SF-6			
C. DESIGNATION						16			
D. NUMBER OF ENGINES						23.5			
E. SPECIFIC IMPULSE - ISP						VARIABLE			
F. THRUST - POUNDS / ENG.									
G. THRUST DURATION - SEC.									
22. PROPELLANTS & GASES									
A. PROPELLANT OR FUEL						N2H3CH3			
B. OXIDIZER						N2O4			
C. GASES						N2			
D. GAS PRESSURE - PSI						3000			
E.									
23. PERFORMANCE									
A. RANGE									
B. ALTITUDE									
C. MAX. VELOCITY									
D. MAX. ACCELERATION - G									
E. TIME - T-SEC.									
24. NOTES:									
(1) Coolant: Monsanto MCS 198									
(2) Liquid bi-propellant system. Two redundant systems are installed; each contains 8 fixed-mount engines which operate on storable hypergolic propellants. A gas pressurized positive expulsion feed system supplies propellant.									
(3) Weight of installed pyrotechnics (Estimated)									
(4) Nominal values									
25. TYPE IN NAME OR NUMBER OF STAGE OR PHASE.									
1. SECURITY CLASSIFICATION								9. REVISION NO. MT	
(U)									





DRAWING - MISSILE OR VEHICLE		1. SECURITY CLASSIFICATION		1963	
Lab Antenna Location -- TIII Sta.-160.00		Unclassified		12 Nov. 1965	
TIII SLS/MOL-HSQ		MC/MAC		28-10	
3900		7. SYSTEM CODE		HSQ	
18. DIMENSIONS, DRAWING OF MISSILE OR VEHICLE SHOWING PAINT PATTERN, CHARACTERISTIC MARKINGS, LOCATION OF ANTENNAE, ETC.					



AFMTC FORM 31M JUN 61 PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.



1. SECURITY CLASSIFICATION

UNCLASSIFIED

2. SECURITY NO.

TELEMETRY SYSTEM				1. SECURITY CLASSIFICATION		2. PAGE 192	
Simulated Laboratory - SSB/FM				(U)		3. DATE 12 Nov. 1965	
4. TEST PROGRAM				5. CONTRACTOR		4. REPLACES PAGE(S)	
TIII SLS/MOL-HSQ				MC		DATED	
10. GENERAL INFORMATION		11. TRANSMITTER CHARACTERISTICS		12. ANTENNA CHARACTERISTICS		13. DATA TO BE TRANSMITTED & REMARKS	
A. TEST CODE: HSQ B. NUMBER OF CHANNELS: CONTINUOUS: 15 COMMUTATED: None C. NUMBER OF SEGMENTS/CHANNEL: N/A CHANNEL SEGMENTS		A. LOCATION: Simulated Lab B. TYPE: SSB/FM C. MODEL: 80801H24000 D. MANUFACTURER: Martin Company E. LINK FREQUENCY: 231.9 F. TYPE OF MODULATION: SSB/FM G. BAND WIDTH AT 3DB: 0.25 H. MIN. DEVIATION: +112.5KC I. MAX. DEVIATION: +137.5KC J. FREQUENCY STABILITY: ± 23.19 K. AVERAGE POWER: 70 WATTS L. CODING AND/OR MODULATION (PCMI): N/A		A. LOCATION: STA. -160 ON BLO (100°)Z. STA. -160 ON BLO (280°)Z. STA. AZ. WITH REFERENCE TO TRUE NORTH AFTER THE VEHICLE IS ERECTED ON THE LAUNCH PAD. B. TYPE: Slotted probe-fed cavity C. MODEL: 804A350110-069 D. MANUFACTURER: Martin Company E. FREQUENCY RANGE: 230-252 MC F. <input type="checkbox"/> TUNABLE <input checked="" type="checkbox"/> FIXED TUNED G. PREDOMINANT POLARIZATION: (CHECK ONLY ONE) <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> HORIZONTAL <input type="checkbox"/> CIRCULAR SENSE: <input type="checkbox"/> LH <input type="checkbox"/> RH <input type="checkbox"/> OTHER H. MAXIMUM GAIN IN DB WITH RESPECT TO ISOTROPIC: 54 DB I. MAIN LOBE BEAMWIDTH IN DEGREES AT 3DB POINTS: ELEVATION N/A AZIMUTH N/A J. EFFECTIVE RADIATED POWER: 56.2 WATTS# K. INDICATE THE AVAILABILITY DATE OF THE ANTENNA PATTERN MEASUREMENTS, PER AFMTC REG 80-14: 1 December 1965 L. IS THERE AVAILABLE A SPECTRUM RESPONSE REPORT ON THIS ANTENNA? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO (IF YES, PROVIDE ONE COPY)		Vehicle Flight Vibration and Acoustics Data.	
D. STATE NON-IRIG PARTICULARS: 75.835 KC Pilot Frequency Subcarrier Frequencies (Service) 1 1.74 - 1.2 KC 2 6.48 - 9.48 KC 3 11.22 - 14.22 KC 4 15.96 - 18.96 KC 5 20.70 - 23.70 KC 6 25.44 - 28.44 KC 7 30.18 - 33.18 KC 8 34.92 - 37.92 KC 9 39.66 - 42.66 KC 10 44.40 - 47.40 KC 11 49.14 - 52.14 KC 12 53.88 - 56.88 KC 13 58.62 - 61.62 KC 14 63.36 - 66.36 KC 15 68.10 - 71.10 KC		M. SPECTRUM ANALYSIS REPORTS ON THIS TRANSMITTER: <input checked="" type="checkbox"/> HAVE BEEN PROVIDED TO THE FREQUENCY CONTROL BRANCH <input type="checkbox"/> WILL BE AVAILABLE (DATE)		#At antenna RF connector.			
		NOTE: TRANSMITTING SYSTEMS WHICH REQUIRE EXTENSIVE PERIODS OF RF CHECKOUT TIME WILL BE REQUIRED TO BE EQUIPPED WITH A CLOSED LOOP OR NON-RADIATING CHECKOUT DEVICE.					

ANTENNA PATTERN (COMMAND CONTROL/DESTRUCT)		1. SECURITY CLASSIFICATION (U)		2. PAGE 152.1.1 3. DATE 12 NOV. 1965 4. REPLACES PAGE(S)	
5. PROGRAM TITLE TIII SLS/MOL-HSQ		6. PROGRAM REQUIREMENT CODE: 3900		7. SYSTEM CODE HC	
10. INSTRUMENTATION SYSTEM:		11. ANTENNA TYPE:		12. ANTENNA POLARIZATION:	
14. FREQUENCY RANGE:		15. PATTERN MEASUREMENT FREQUENCY:		16. MODEL SCALE:	
18. ANTENNA PATTERN PLOT		13. POLARIZATION PLOTTED:		17. TEST CODE:	
(PR) 0 NOSE		19. PHYSICAL LOCATION OF POINT P:		9. REVISION NO.	
1. SECURITY CLASSIFICATION (U)		1. SECURITY CLASSIFICATION (U)		1. SECURITY CLASSIFICATION (U)	

Antenna Contour Plots associated with page 152 and 152.1 are contained in the Flight Termination System Report, Program 624A, SSD-CR-63-123.



ANTENNA PATTERN (OTHER)		Monopole (Ground Radar Plane) Reentry Module with Adapter		1. SECURITY CLASSIFICATION (U)		2. PAGE 152, 3	
3. PROGRAM TITLE TIII SLS/MOL-HSQ		6. PROGRAM REQUIREMENT CODE: 5900		8. CONTRACTOR MAC		3. DATE 12 NOV. 1965	
4. INSTRUMENTATION SYSTEM T/LN		11. ANTENNA TYPE Monopole		12. POLARIZATION PLOTTED: Right Circular		4. REPLACES PAGE(S)	
5. FREQUENCY RANGE 259.7		13. PATTERN MEASUREMENT FREQUENCY 779.1		14. MODEL SCALE: 1/3 Full Scale		17. TEST CODE: HSQ	
5. ANTENNA PATTERN PLOT		15. DEGREES		16. DEGREES		DATED:	

ANTENNA PATTERN (OTHER) MONOPOLE (RADAR GROUND PLANE) REENTRY MODULE ONLY		1. SECURITY CLASSIFICATION (U)	
2. PAGE 152_4 3. DATE 12 Nov. 1965 4. REPLACES PAGE(S)		5. PROGRAM TITLE TIII SLS/MOL-HSQ	
6. PROGRAM REQUIREMENT 7. SYSTEM CODE CODE: 3900		8. CONTRACTOR MAC	
11. ANTENNA TYPE: Monopole 12. ANTENNA POLARIZATION: Linear		13. POLARIZATION PLOTTED: Right Circular	
14. FREQUENCY RANGE: 259.7 MC 15. PATTERN MEASUREMENT FREQUENCY: 779.1		16. MODEL SCALE: 1/3 Full Scale	
18. ANTENNA PATTERN PLOT		17. TEST CODE: HSQ	
9. DEGREES 0° 180° 360°		DATED:	

18. PHYSICAL LOCATION OF POINT P₁:
 2161.55; A2=10° East of North

19. SECURITY CLASSIFICATION
 (U)

20. REVISION NO.

AFMTC FORM 50E
 FEB 61

PREVIOUS EDITIONS OF THIS
 FORM ARE OBSOLETE.

REAL TIME TELEMETRY SYSTEM
ON DESCENT ANTENNA

ANTENNA PATTERN
(OTHER)

PROGRAM TITLE: TIII SLS/MOL-GSQ

1. SECURITY CLASSIFICATION: (U)

2. PAGE: 152.5

3. DATE: 12 NOV. 1965

4. REPLACES PAGE(S):

5. PROGRAM REQUIREMENT: 7. SYSTEM CODE: CODE:

8. CONTRACTOR: MAC

9. DATED:

10. INSTRUMENTATION SYSTEM: COMMUNICATIONS

11. ANTENNA TYPE: MONOPOLE

12. ANTENNA POLARIZATION: LINEAR

13. POLARIZATION PLOTTED: RIGHT CIRCULAR

14. FREQUENCY RANGE: 259.7 MC

15. PATTERN MEASUREMENT FREQUENCY: 779.1

16. MODEL SCALE: 1/3 FULL SCALE

17. TEST CODE: HSQ

18. ANTENNA PATTERN PLOT

0 - DEGREES

90 180 270 360

0 - DEGREES

90 180 270 360

HSQ SPACECRAFT (REAL TIME)		TELEMETRY SYSTEM		1. SECURITY CLASSIFICATION		2. PAGE 152, 6	
3. TEST PROGRAM		4. PROGRAM REQUIREMENT		5. SYSTEM CODE		3. DATE 12 NOV. 1965	
TIII SLS/MOL-HSQ		NO. 3900				4. REPLACES PAGE(S)	
11. TEST CODE		12.		8. CONTRACTOR		DATED	
HSQ				MAC			
<p>E. Data Format:</p> <ol style="list-style-type: none"> 1. Word Structure: 8 Bits 2. Master Frame: <ol style="list-style-type: none"> a) Consists of: 160 Words b) Sampling Rate: 40 Master Frames Per Second c) Sync. Word: First Three Words 01001100 11010111 10000010 (192) d) No Address e) 3 Words Sampled at the Basic Master Frame Sampling Rate f) Supercommutation: <ol style="list-style-type: none"> 6 Data Channels consist of 16 Supercommutated Words Each (640 sps) 6 Data Channels consist of 4 Supercommutated Words Each (160 sps) 9 Data Channels consist of 2 Supercommutated Words Each (80 sps) g) Subcommutation (prime sub frame) <ol style="list-style-type: none"> (1) The prime sub frame (psf) is constructed from 16 master frame words making 64 psf words. Sampled at 10 sps. (2) 3 psf words are prime sub frame sync and address as follows: 011011001110101000xxxx (x = address) (3) 6 psf words are supercommutated to give 3 channels at 20 sps. (4) 12 psf words are supercommutated to give 3 channels at 40 sps. (5) 22 psf words are at prime sub frame rate of 10 sps sub-commutated to give: 7 ch. at 10 sps. 11 Bi-level 8 bit ch. at 10 sps. 4 Bi-level pulse 8 bit ch. at 10 sps. (6) 15 psf words are sub-commutated to give 120 ch. at 1.25 sps. (7) 3 psf words are sub-commutated to give 3 words forming a 24 bit digital word at .416 sps occupying 3 consecutive 8 bit word spaces, giving 24 ch. at .416 sps. (8) 3 psf words are sub-commutated to give 72 ch. at .416 sps. 3. Output to Transmitter: a 51.2 K Bit per second NRZ Change Signal 							



HSQ SPACECRAFT (REAL TIME) TELEMETRY SYSTEM		1. SECURITY CLASSIFICATION (U)		2. PAGE 1527 3. DATE 12 Nov. 1965 4. REPLACES PAGE(S)
5. TEST PROGRAM TIII SLS/MOL-HSQ		6. PROGRAM REQUIREMENT NO. 3900	7. SYSTEM CODE	8. CONTRACTOR MAC
10. ITEM NO.	11. TEST CODE	12.		
HSQ	F. Filtering Pre-Modulation filtering with the following characteristics: 1. Lowpass: The 3 db point shall be 0.7 of bit rate. 2. Type: Manual Linear phase response. 3. Roll Off: 36 db per octave final slope until 60 db down.			

AFMTC FORM 315 JUN 61 PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.



1. SECURITY CLASSIFICATION

(U)

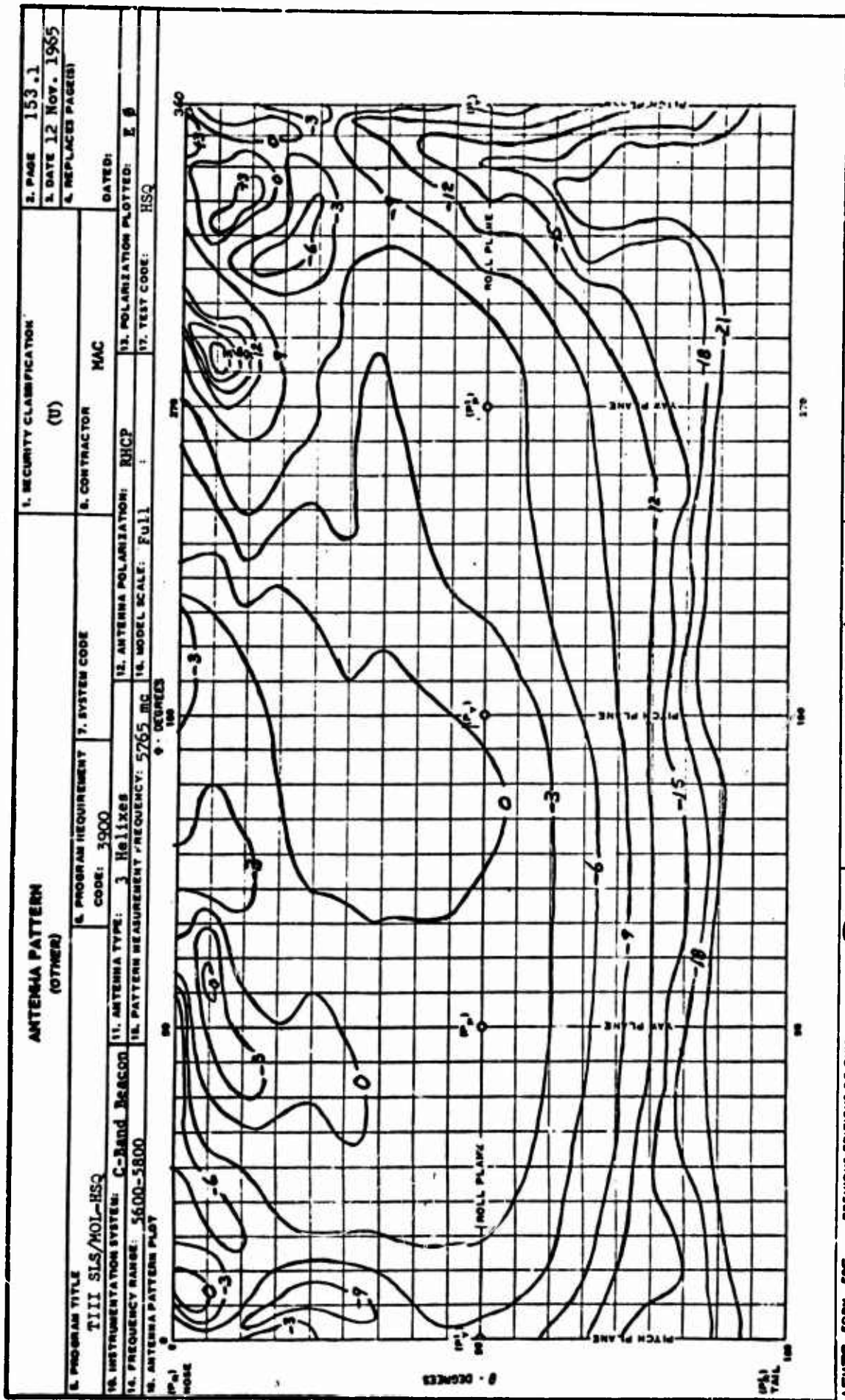
2.

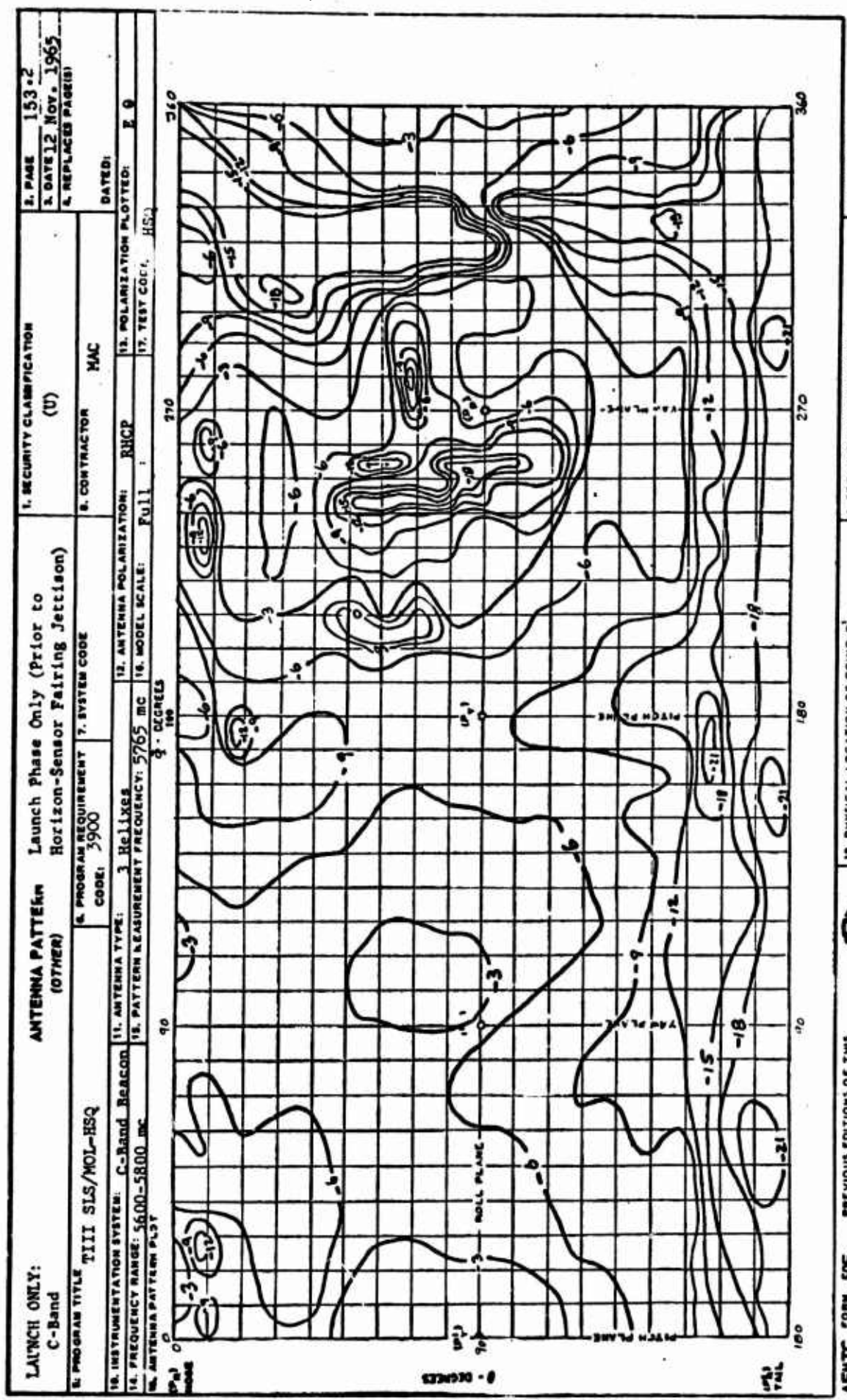
REVISION NO.
BY

HS3 SPACECRAFT (C-BAND)				TRANSPONDERS AND BEACONS		1. SECURITY CLASSIFICATION (U)		2. PAGE 153 3. DATE 12 Nov. 1965 4. REPLACES PAGE#	
5. TEST PROGRAM TIII SLS/MOL-HSQ		6. PROGRAM REQUIREMENT NO. 3900		7. SYSTEM CODE		8. CONTRACTOR MAC		9. DATED	
10. GENERAL INFORMATION		11. TRANSMITTER CHARACTERISTICS		12. RECEIVER CHARACTERISTICS		13. ANTENNA CHARACTERISTICS		14. SECURITY CLASSIFICATION	
A. TEST CODE: HSQ		A. FREQUENCY RANGE: 5600 to 5800 MC		A. FREQUENCY RANGE: 5600 to 5800 MC		A. LOCATION: STA. 2166.20 : 64.0		15. SECURITY CLASSIFICATION	
B. PURPOSE: RANGE SAFETY-IMPACT PREDICTION		B. <input type="checkbox"/> TUNABLE <input checked="" type="checkbox"/> FIXED TUNED		B. <input type="checkbox"/> TUNABLE <input checked="" type="checkbox"/> FIXED TUNED		STA. 2166.20 : 174.5		16. SECURITY CLASSIFICATION	
C. <input checked="" type="checkbox"/> MIDCOURSE TRAJECTORY DATA		C. BANDWIDTH AT 300: AND AT 8000: <input type="checkbox"/> PULSE, <input type="checkbox"/> COMPOSITE NONSTANDARD		C. INTERMEDIATE FREQUENCY: 80 MC		STA. 2166.20 : 294.5		17. SECURITY CLASSIFICATION	
D. <input checked="" type="checkbox"/> TERMINAL TRAJECTORY DATA		D. EMISSION: <input type="checkbox"/> AM, <input type="checkbox"/> FM, <input checked="" type="checkbox"/> PULSE, <input type="checkbox"/> COMPOSITE NONSTANDARD		D. LOCAL OSCILLATOR FREQUENCY <input type="checkbox"/> ABOVE, <input checked="" type="checkbox"/> BELOW INTERROGATION FREQUENCY		STA.		18. SECURITY CLASSIFICATION	
E. <input type="checkbox"/> TELEMETRY		E. FREQUENCY STABILITY: ± 3.0 MC		E. METHOD OF FREQUENCY CONTROL:		WITH REFERENCE TO TRUE M'RTN AFTER THE VEHICLE IS ERECTED ON THE LAUNCH PAD.		19. SECURITY CLASSIFICATION	
F. AVERAGE POWER: MC/C		F. AVERAGE POWER: 1000 WATTS		F. FREQUENCY STABILITY: ± 3.0		B. TYPE: Cavity Helix		20. SECURITY CLASSIFICATION	
G. LOCATION: Re-entry Modulator		G. PEAK PULSE POWER: 2000 WATTS		G. SENSITIVITY: MAXIMUM: DBM AT 5690		C. MODEL: 52-85702-17		21. SECURITY CLASSIFICATION	
H. TYPE: <input checked="" type="checkbox"/> TRANSDUCER <input type="checkbox"/> BEACON		H. MAXIMUM PFI: 2000 PPS		H. MINIMUM: DBM AT		D. MANUFACTURER: Enbitfor		22. SECURITY CLASSIFICATION	
I. MODEL: 152-C2		I. PULSE WIDTH: $0.7 \pm .2$ US, AT 300 POINTS		I. NOMINAL: -70		E. FREQUENCY RANGE: 5600 to 5800 MC		23. SECURITY CLASSIFICATION	
J. MANUFACTURER: ACF Electronics		J. FIXED DELAY SETTINGS: 3.0 US, MAXIMUM DELAY VARIATION WITH SIGNAL		J. SELECTIVITY: OVERALL: 30dB Max. of 40		F. <input type="checkbox"/> TUNABLE <input checked="" type="checkbox"/> FIXED TUNED		24. SECURITY CLASSIFICATION	
K. INTERROGATION PULSE CODE CAPABILITIES:		K. MAXIMUM DELAY VARIATION WITH SIGNAL		K. RECOVERY TIME: 60		G. PREDOMINANT POLARIZATION: (CHECK ONLY ONE) <input type="checkbox"/> VERTICAL <input type="checkbox"/> HORIZONTAL <input checked="" type="checkbox"/> CIRCULAR: SENSE: <input type="checkbox"/> LH <input checked="" type="checkbox"/> RH		25. SECURITY CLASSIFICATION	
L. SINGLE PULSE <input checked="" type="checkbox"/> DOUBLE PULSES (Accept) 9, 0.5 (Reject) : Other Than (Lockout) 168 to 183		L. RECOVERY TIME: 60		L. TYPE AGC: None		H. MAXIMUM GAIN IN DB WITH RESPECT TO ISOTROPIC: DB		26. SECURITY CLASSIFICATION	
M. PULSE SPACINGS FIRST & SECOND PULSES		M. MINIMUM FREQUENCY SEPARATION REQUIRED BETWEEN TRANSMITTER AND RECEIVER 75 MC		M. AGC TIME CONST: N/A		I. MAXIMUM NULL IN DB WITH RESPECT TO ISOTROPIC: DB		27. SECURITY CLASSIFICATION	
N. COMMAND CONTROL CODE CAPABILITIES: N/A		N. NOMINAL WARM-UP TIME: 2 MINUTES		N. RECOVERY TIME TO 300 POINT: 2 MINUTES		J. MAIN LOBE BEAMWIDTH IN DEGREES AT 300 POINTS: ELEVATION: AZIMUTH		28. SECURITY CLASSIFICATION	
O. AVAILABLE:		O. IS THERE AVAILABLE A SPECTRUM ANALYSIS REPORT ON THIS TRANSMITTER? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		O. SPECTRUM ANALYSIS REPORTS ON THIS RECEIVER COVERING THE FREQUENCY RANGE 100 MC TO 10,000 MC: <input type="checkbox"/> HAVE BEEN PROVIDED TO FREQUENCY CONTROL BRANCH <input type="checkbox"/> WILL BE AVAILABLE (DATE)		K. INDICATE AVAILABILITY DATE OF ANTENNA PATTERN MEASUREMENTS PER AFMTC REG 80-141		29. SECURITY CLASSIFICATION	
P. TYPE OF PULSE MODULATION: 24 VOLTS, 35 WATTS		P. SPECTRUM ANALYSIS REPORTS ON THIS TRANSMITTER: <input type="checkbox"/> HAVE BEEN PROVIDED TO THE FREQUENCY CONTROL BRANCH <input checked="" type="checkbox"/> WILL BE AVAILABLE 1 Feb. 1966 (DATE)		P. SPECTRUM ANALYSIS REPORTS ON THIS RECEIVER COVERING THE FREQUENCY RANGE 100 MC TO 10,000 MC: <input type="checkbox"/> HAVE BEEN PROVIDED TO FREQUENCY CONTROL BRANCH <input type="checkbox"/> WILL BE AVAILABLE (DATE)		L. IS THERE AVAILABLE A SPECTRUM ANALYSIS REPORT ON THIS ANTENNA? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		30. SECURITY CLASSIFICATION	
Q. NUMBER OF COMMAND CHANNELS AVAILABLE:		Q. NUMBER OF COMMAND CHANNELS AVAILABLE:		Q. NUMBER OF COMMAND CHANNELS AVAILABLE:		M. USE AFMTC FORM 802 FOR ANTENNA PATTERN AND AFMTC FORM 80 FOR ANTENNA SYSTEM SCHEMATIC.		31. SECURITY CLASSIFICATION	



AFMTC FORM 31P PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.
JUN 61

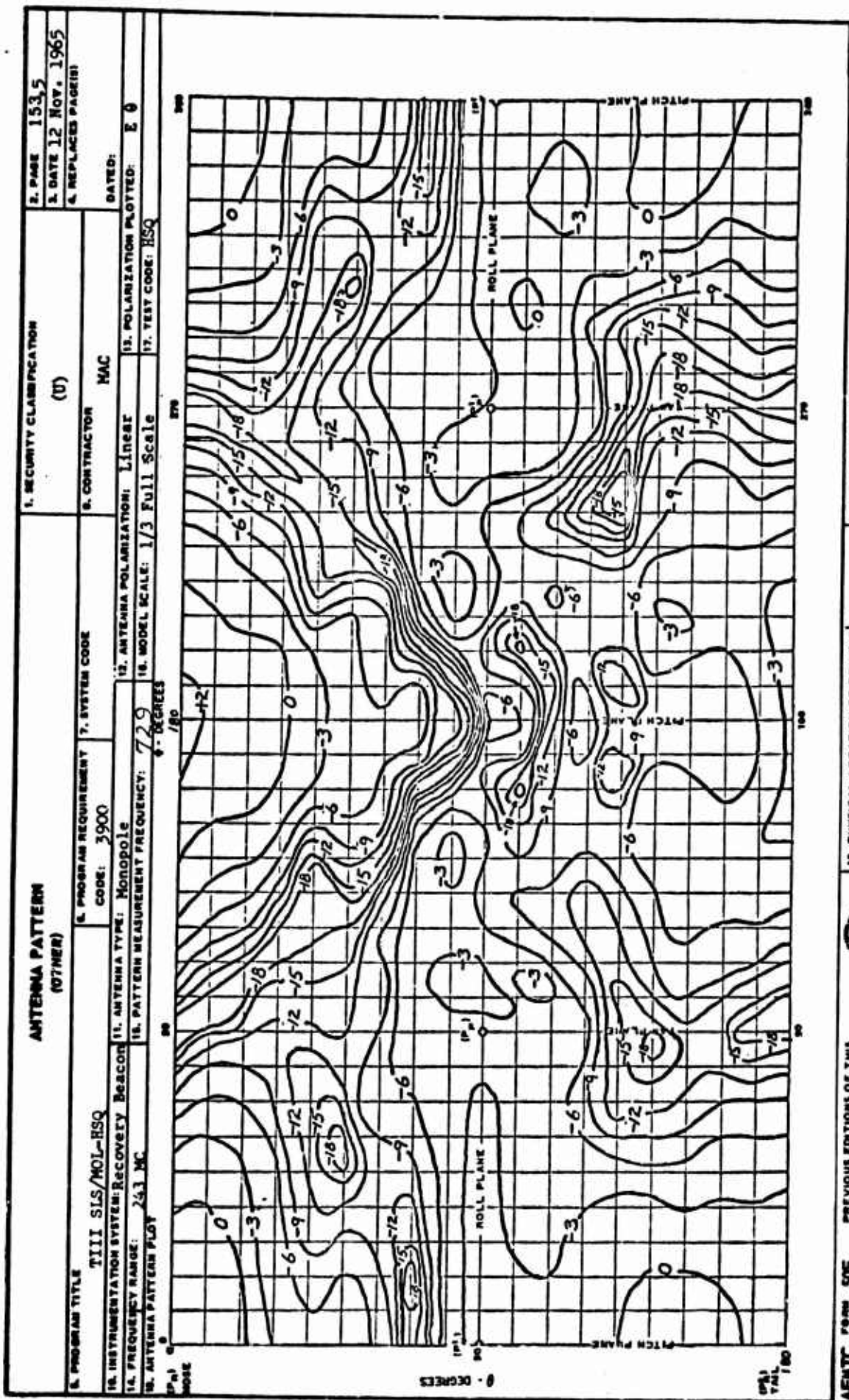




ANTENNA PATTERN (OTHER)		1. SECURITY CLASSIFICATION		2. PAGE 153.3	
		(U)		3. DATE 12 NOV. 1965	
4. PROGRAM TITLE		5. PROGRAM REQUIREMENT		6. REPLACES PAGE(S)	
TIII SLS/MCL-HSQ		CODE: 3900		7. SYSTEM CODE	
10. INSTRUMENTATION SYSTEM: C-Band Sytem		11. ANTENNA TYPE: 3 Helixes		8. CONTRACTOR MAC	
12. FREQUENCY RANGE: 5600-5800 MC		13. PATTERN MEASUREMENT FREQUENCY: 5765 MC		9. DATED:	
14. ANTENNA PATTERN PLOT		15. MODEL SCALE: Full		10. POLARIZATION PLOTTED: E 9	
		16. DEGREES		11. TEST CODE: HS	

HSQ SPACECRAFT (UHF RECOVERY)			1. SECURITY CLASSIFICATION (U)		2. PAGE 153, 4 3. DATE 12 NOV. 1965 4. REPLACES PAGE(S)		
A. TEST PROGRAM TIII SLS/MOL-HSQ		6. PROGRAM REQUIREMENT NO. 3900		7. SYSTEM CODE		8. CONTRACTOR MAC	
10. GENERAL INFORMATION		11. TRANSMITTER CHARACTERISTICS		12. RECEIVER CHARACTERISTICS		13. ANTENNA CHARACTERISTICS	
A. TEST CODE: HSQ B. PURPOSE: <input type="checkbox"/> RANGE SAFETY-IMPACT PREDICTION <input type="checkbox"/> MIDCOURSE TRAJECTORY DATA <input type="checkbox"/> TERMINAL TRAJECTORY DATA <input type="checkbox"/> TELEMETRY <input checked="" type="checkbox"/> Rescue C. LOCATION: Adapter Module/STAGE D. TYPE: <input type="checkbox"/> TRANSponder <input checked="" type="checkbox"/> BEACON E. MODEL: (52-85719-13*) ACR-9/UT-100 F. MANUFACTURER: ACR Electronics G. INTERROGATION PULSE CODE CAPABILITIES: N/A <input type="checkbox"/> SINGLE PULSE <input type="checkbox"/> DOUBLE PULSES <input type="checkbox"/> PULSE SPACING DOUBLE PULSE SPACING <input type="checkbox"/> TRIPLE PULSES PULSE SPACING FIRST & SECOND PULSES SECOND & THIRD PULSES H. COMMAND CONTROL CODE CAPABILITIES: N/A NUMBER OF COMMAND CHANNELS AVAILABLE: I. POWER REQUIREMENTS: 18-30.5 VOLTS, 25 WATTS		A. FREQUENCY RANGE: 243 MC B. <input type="checkbox"/> TUNABLE <input checked="" type="checkbox"/> FIXED TUNED C. BANDWIDTH AT 3DB: N/A AND AT 90DB: D. EMISSION: <input type="checkbox"/> AM, <input type="checkbox"/> FM, <input checked="" type="checkbox"/> PULSE, <input type="checkbox"/> COMPOSITE NONSTANDARD E. FREQUENCY STABILITY: 0.01% F. AVERAGE POWER: N/A G. PEAK PULSE POWER: 50W Min H. MAXIMUM PRF: N/A PULSE WIDTH: 30-100US, AT 300 POINTS J. FIXED DELAY SETTINGS: N/A K. MAXIMUM DELAY VARIATION WITH SIGNAL STRENGTH FROM 100M TO WITHIN - DBM OF MAX- MUM SENSITIVITY OF RECEIVER: N/A L. RECOVERY TIME: N/A M. MINIMUM FREQUENCY SEPARATION REQUIRED BETWEEN TRANSMITTER AND RECEIVER N/A N. NOMINAL WARM-UP TIME: 0.5 MINUTES O. IS THERE AVAILABLE A SPECTRUM ANALYSIS REPORT ON THIS TRANSMITTER? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO P. SPECTRUM ANALYSIS REPORTS ON THIS TRANSMITTER: <input type="checkbox"/> HAVE BEEN PROVIDED TO THE FREQUENCY CONTROL BRANCH <input type="checkbox"/> WILL BE AVAILABLE (DATE) Pulse Group Spacing 5MS+500US Pulse Code Spacing 130-10US *NAC Part Number		A. FREQUENCY RANGE: MC B. <input type="checkbox"/> TUNABLE <input type="checkbox"/> FIXED TUNED C. INTERMEDIATE FREQUENCY: MC D. LOCAL OSCILLATOR FREQUENCY <input type="checkbox"/> ABOVE, <input type="checkbox"/> BELOW INTERMODULATION FREQUENCY E. METHOD OF FREQUENCY CONTROL: F. FREQUENCY STABILITY: 1 G. SENSITIVITY: MAXIMUM: DBM AT MINIMUM: DBM AT NOMINAL: DBM AT H. SELECTIVITY: (OVERALL) 3DB 30DB 80DB I. TYPE AGC: J. AGC TIME CONST: K. RECOVERY TIME TO 300 POINT: L. NOMINAL WARM-UP TIME: MINUTES M. SPECTRUM ANALYSIS REPORTS ON THIS RECEIVER COVERING THE FREQUENCY RANGE 100 MC TO 10,000 MC: <input type="checkbox"/> HAVE BEEN PROVIDED TO FREQUENCY CONTROL BRANCH <input type="checkbox"/> WILL BE AVAILABLE (DATE)		A. LOCATION: STA. 2123.96, 185 STA. STA. STA. WITH REFERENCE TO TRUE NORTH AFTER THE VEHICLE IS ERECTED ON THE LAUNCH PAD. B. TYPE: Wave Whip C. MODEL: 52-85102-301 D. MANUFACTURER: McDonnell E. FREQUENCY RANGE: 243 F. <input type="checkbox"/> TUNABLE <input checked="" type="checkbox"/> FIXED TUNED G. PREDOMINANT POLARIZATION: (CHECK ONLY ONE) <input checked="" type="checkbox"/> VERTICAL Linear <input type="checkbox"/> HORIZONTAL <input type="checkbox"/> CIRCULAR: SENSE: <input type="checkbox"/> LH <input type="checkbox"/> RH H. MAXIMUM GAIN IN DB WITH RESPECT TO ISOTROPIC: I. MAXIMUM NULL IN DB WITH RESPECT TO ISOTROPIC: J. MAIN LOBE BEAMWIDTH IN DEGREES AT 3DB POINT: N/A ELEVATION: AZIMUTH K. INDICATE AVAILABILITY DATE OF ANTENNA PATTERN MEASUREMENTS PER AFMTC REG 80-14: L. IS THERE AVAILABLE A SPECTRUM ANALYSIS REPORT ON THIS ANTENNA? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO M. USE AFMTC FORM 30E FOR ANTENNA PATTERN AND AFMTC FORM 30 FOR ANTENNA SYSTEM SCHEMATIC.	
NOTE: QUANTITATIVE DATA FURNISHED ON THIS PAGE SHOULD BE MEASURED VALUES AFTER NOMINAL WARMUP TIME. WHERE APPLICABLE, THE DATA SOURCES OF UNMEASURED VALUES SHOULD BE INDICATED BY FOOTNOTE.		1. SECURITY CLASSIFICATION (U)		2. REVISION NO. MT			





AFMTC FORM 50E
1 FEB 63

PREVIOUS EDITIONS OF THIS
FORM ARE OBSOLETE.



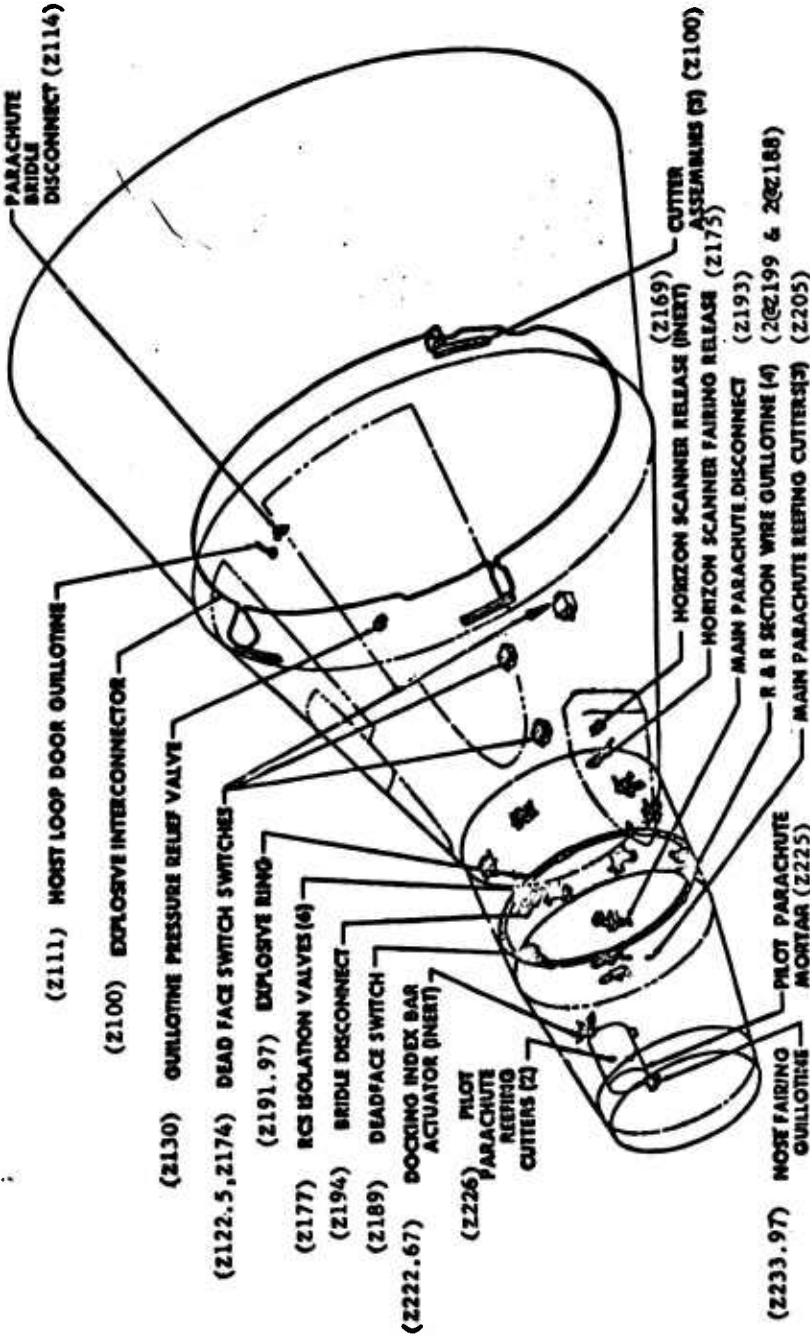
18. PHYSICAL LOCATION OF POINT P₁:
2161.35; Az=10° East of North

1. SECURITY CLASSIFICATION
(U)

8. REVISION NO.

HSQ SPACECRAFT		ORDNANCE (Drawing)		1. SECURITY CLASSIFICATION (U)		2. PAGE 154	
3. TEST PROGRAM TIII SLS/MOL-HSQ		6. PROGRAM REQUIREMENT NO. 3900		7. SYSTEM CODE		5. DATE 12 NOV 1965	
8. DIMENSIONAL DRAWING OF MISSILE/TEST VEHICLE SHOWING THE LOCATION OF ALL ORDNANCE ITEMS		9. CONTRACTOR MAC		4. REPLACES PAGE#		6. REVISION NO. BY	
				DATED			
				TEST CODES			

PYROTECHNIC DEVICES



ORDNANCE ITEMS - HSQ SPACECRAFT															1. SECURITY CLASSIFICATION		2. DATE 12 NOV, 1965		3. REPLACES PAGE(S)	
TIII SLS/NOL-HSQ															4. CONTRACTOR		5. DATED		6. PAGE 155	
7. SYSTEM CODE															8. MAC		9. BRIDGE		10. RIP	
11. PROGRAM REQUIREMENT NO. 3900															12. CURRENT-AMPS		13. NO FIRE		14. NO FIRE	
15. MANUFACTURER															16. NO FIRE		17. NO FIRE		18. NO FIRE	
19. PART NUMBER															20. NO FIRE		21. NO FIRE		22. NO FIRE	
23. TYPE															24. NO FIRE		25. NO FIRE		26. NO FIRE	
27. PURPOSE															28. NO FIRE		29. NO FIRE		30. NO FIRE	
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715. HSQ															716. NO FIRE		717. NO FIRE		718. NO FIRE	
719. HSQ															720. NO FIRE		721. NO FIRE		722. NO FIRE	
723. HSQ															724. NO FIRE		725. NO FIRE		726. NO FIRE	
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FORM 31V
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PREVIOUS EDITIONS OF THIS
FORM ARE OBSOLETE.

OTHER VEHICLEBORNE EQUIPMENT				1. SECURITY CLASSIFICATION		2. DATE	
				(U)		17	
						3. DATE 12 Nov 1965	
						4. SECURITY PRIORITY	
				5. SYSTEM CODE		6. SYSTEM CODE	
				7. PROGRAM REQUIREMENT CODE		8. SYSTEM CODE	
				3900		MAC	
						9. SYSTEM CODE	
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1	HSQ	Flashing Recovery Light:	<p>A. Extends at main parachute jettison.</p> <p>B. Flashing rate at least 15 flashes per minute.</p> <p>C. Flash duration at least 10 microseconds at the 50 percent intensity points.</p> <p>D. Intensity shall be a minimum of 1.2 candle-seconds per flash measured at a look-angle perpendicular to either major light surface.</p>				
2	HSQ	Dye Marker Assembly:	<p>A. Dye marker package installed below spacecraft flotation line on forward end of the RCS section. Package is exposed after R&R section is jettisoned.</p> <p>B. Dye marker shall consist of a yellow fluorescent dye.</p>				
3	HSQ	Hoist Loop:	<p>A. Hoist loop cable extended at main parachute jettison.</p> <p>B. Provides an attach point for lifting devices used for recovering the spacecraft.</p>				



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1. SECURITY CLASSIFICATION

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SYSTEM MISSION CAPABILITIES				1. SECURITY CLASSIFICATION		2. PAGE 138	
3. NEW PROGRAM TITLE		4. PROGRAM REQUIREMENT CODE		5. DATE 12 Nov. 1965		6. REPLACES FORM (S)	
TIII SLS/MOL-HSQ		3900		(U)		7. DATED	
8. CHARACTERISTICS		9. SUPPORT REQUIREMENTS		10. OPERATIONAL PROFILE/SKETCH OF TACTICAL SITUATION		11. SECURITY CLASSIFICATION	
<p>To gather environmental data and qualify selected hardware prior to manned flight.</p> <p>1. Heat Shield Qualification</p> <p>2. Gather Environmental Data on spacecraft during ascent.</p>		<p>1. ITL System (VIB, SHAB, LAUNCH COMPLEX 40, Rail System)</p> <p>2. TM Data receiving and recording network.</p> <p>3. Radar tracking and metric data recording network.</p> <p>4. Atmospheric data gathering and recording network.</p> <p>5. Recovery forces (aircraft, ships, men, etc.) and equipment as required to recover the HSQ re-entry module.</p>				<p>(U)</p>	
<p>9. SIGNIFICANT CHARACTERISTICS AND CAPABILITIES</p> <p>1. Unmanned suborbital flight.</p> <p>2. Spacecraft equipped with recovery system.</p>							
<p>10. CONSTRAINTS IMPLICATING DESIGN</p> <p>Earliest possible manned flight.</p>							

SYSTEM FUNCTIONAL DESCRIPTION		1. SECURITY CLASSIFICATION (U)		2. PAGE 159	
3. TITLE TIII SLS/MOL-HSQ		4. SYSTEM CODE 3900		3. DATE 12 NOV. 1965	
5. SYSTEM/MAJOR COMPONENT		6. PROJECT IDENTIFICATION CODE 3900		4. REPLACES PAGE(S)	
10. SYSTEM CHARACTERISTICS		7. SYSTEM CODE		5. DATES	
11. FUNCTIONAL BLOCK DIAGRAM		8. CONTRACTOR/CONTACT NUMBER MAC			
A. Structure		Refer to Page 151 for outline drawing.			
<p>The HSQ Spacecraft structure contains two elements, the re-entry module and the adapter section. The re-entry module structure is the basic Gemini A, modified to include a circular crew transfer hatch in the heat shield. The adapter is a new structure, in the shape of 15 Deg. frustum of a cone, 56 inches long, with "boiler-plate" steel construction.</p> <p>Normally, the re-entry module structure houses and protects the spacecraft systems and crew from hostile environment during launch, orbit and re-entry. This flight will be unmanned and will demonstrate the protection capability during re-entry.</p> <p>The adapter provides transition and attachment between the re-entry module and the simulated laboratory.</p>					



SYSTEM FUNCTIONAL DESCRIPTION HSQ SPACECRAFT		1. SECURITY CLASSIFICATION (U)		2. PAGE 159, 1	
3. TEST PROGRAM TITLE TIH SLS/MOL-HSQ		4. PROGRAM REQUIREMENT ORG 3900		5. DATE 12 November 1965	
6. PROGRAM REQUIREMENT ORG 3900		7. SYSTEM ORG MAC		8. REPLACES PART(S) DATED	
9. SUB SYSTEM/MAJOR COMPONENT B. Re-entry Control System (RCS)		10. FUNCTIONAL CHARACTERISTICS <p>The RCS consists of two identical and redundant hypergolic bi-propellant rocket engine systems as shown in figure 159A. The pressurant is gaseous Nitrogen (N₂). The propellants are Nitrogen Tetroxide (N₂O₄) oxidizer and Mono-methylhydrazine (H₂CH₃) fuel.</p> <p>The function of the RCS is to produce thrust which due to the TCA installation geometry generates attitude control torques. The TCA propellant valves receive command signals from the attitude control electronics subsystem to produce control about the pitch, roll and yaw axes. The cart-ridge actuated valves serving to isolate the propellants prior to system activation are operated via command from the AGE.</p> <p>The motor operated shut off valves are operated via commands from the sequencer system. Other interfaces include the instrumentation system and AGE.</p>			
11. FUNCTIONAL BLOCK DIAGRAM					



SYSTEM FUNCTIONAL DESCRIPTION HSQ SPACECRAFT		1. SECURITY CLASSIFICATION (U)		2. PAGE 159 2 3. DATE 12 Nov. 1965 4. REPLACES PAGE(S)	
5. TEST PROGRAM TITLE TIII SLS/MOL-HSQ		6. PROGRAM REQUIREMENT CODE 3900		7. SYSTEM CODE	
8. SUB SYSTEM/MAJOR COMPONENT C. Guidance and Control System		9. FUNCTIONAL CHARACTERISTICS <p>The Guidance and Control System includes electronic and related electrical equipment to provide spacecraft attitude orientation and rate damping. This system includes (1) Inertial Measurement Unit (IMU), (2) Attitude Control Electronics (ACE), (3) Rate Gyro Packages, (4) Control Circuitry and input devices required for system operation.</p> <p>The IMU consists of a four gimbal, stabilized inertial platform, subsystem electronics and a power supply.</p> <p>The ACE accepts input signals from the IMU, rate gyros and sequencer and converts these signals to firing commands for the RCS engines.</p> <p>Numerous instrumentation parameters provide system monitor capability.</p>			
10. SYSTEM FUNCTIONAL BLOCK DIAGRAM					
<pre> graph TD FM[Flat. Mode Selector] --> IMU[IMU Plat., Subsys. Elect., Pwr. Supply] S[Sequencer] --> ACE[ACE] AE[Attitude Control Electronics] --> ACE RG[Rate Gyros] --> ACE IMU --> ACE ACE --> RE[RCS Engines (TCA'S)] </pre>					

Figure 159B. GUIDANCE AND CONTROL SYSTEM



SYSTEM FUNCTIONAL DESCRIPTION		1. SECURITY CLASSIFICATION		2. PAGE 159 3	
3. TEST PROGRAM TITLE		4. DATE 15 Nov. 1965		5. REPLACES PAGE(S)	
6. SYSTEM/MAJOR COMPONENT		7. PROGRAM ELEMENT CODE		8. CONTRACT/PROJECT NUMBER	
THX SLS/MOL-HSQ		3900		MAC	
9. FUNCTIONAL CHARACTERISTICS		10. SYSTEM CODE		11. DATED	
D. Electrical System		12.		SYSTEM FUNCTIONAL BLOCK DIAGRAM	
<p>1. The primary DC electrical power for the spacecraft shall be supplied by silver-zinc batteries. Power source shall be capable of supplying nominal 24VDC power to the Bus for the electrically operated equipment for all phases of the plan mission. In addition, sufficient power shall be available for a postlanding period of 12 hours for necessary recovery equipment. No primary AC electrical power system shall be provided for the spacecraft. Devices utilizing AC power shall obtain power from self-contained inverters within the individual systems. The inverters shall not be considered part of the electrical system but shall be inherent parts of the system served. Prior to launch, external electrical power shall be provided to the spacecraft through umbilicals and ACE cables from the ACE power supplies to prevent undue depletion of the spacecraft power supplies. Transfer from ACE power supplies to spacecraft power supplies shall occur before umbilical disconnect.</p> <p>2. Power control and distribution is divided into these major subsystems: (1) Main Bus, (2) Control Bus, and (3) Simulator (Sequencer) Power Busses. Main Bus Power is supplied by four silver-zinc batteries(Cont.)</p>					

Figure 159C. MAIN BUS POWER

Figure 159D. SIMULATOR (SEQUENCER) BUS POWER

SYSTEM FUNCTIONAL DESCRIPTION HSQ SPACECRAFT		1. SECURITY CLASSIFICATION (U)		2. PAGE 159.4 3. DATE 12 Nov. 1965 4. PREPARED BY 5. DATED	
6. PROGRAM REQUIREMENT CODE 3900		7. SYSTEM CODE		8. CONTRACTOR/CONTRACT NUMBER MAC	
9. SUB SYSTEM/MAJOR COMPONENT TIII SLS/MOL-HSQ		10. SYSTEM FUNCTIONAL BLOCK DIAGRAM			
11. FUNCTIONAL CHARACTERISTICS <p>(see Figure 159C). External power for prelaunch testing is supplied via the umbilical. External control of on-board and ACE power is provided.</p> <p>3. Control Bus Power is supplied by three silver-zinc batteries. (See Figure 159E) This bus is utilized to operate spacecraft control and switching circuitry. Each of the Isolated Squib Busses is powered from one of the squib batteries. The squib busses supply power for all spacecraft pyrotechnics. External control of on-board and ACE power is provided.</p> <p>4. Simulator (Sequencer) Power Busses are supplied by four silver-zinc batteries. (See Figure 159D). These Busses supply power for the automated system.</p>		12.			
D. Electrical System (Continued)					

Figure 159E. CONTROL BUS POWER



SYSTEM FUNCTIONAL DESCRIPTION				1. SECURITY CLASSIFICATION		2. PAGE 199, 5	
HSQ SPACECRAFT				(U)		3. DATE 12 Nov. 1965	
4. PROGRAM REQUIREMENT CODE 3900				5. CONTRACTOR/CONTRACT NUMBER MAC		6. REVISIONS PAGE(1)	
7. SYSTEM CODE				8. DATED			
9. SUB SYSTEM/MAJOR COMPONENT				10. SYSTEM FUNCTIONAL BLOCK DIAGRAM			
<p>E. Communication and Tracking System</p> <p>The communications and tracking system consists of a C-Band Beacon, a telemetry transmitter, a UHF recovery beacon, and a flashing recovery light. The nose stub antenna, the descent antenna, the recovery antenna, and the C-Band tri-helix antenna of the Gemini A have been retained.</p> <p>The functions of the communications and tracking system are:</p> <ol style="list-style-type: none"> 1. To provide an RF link for real time transmission of spacecraft system parameters to ground stations. 2. To provide RF signals for tracking stations to determine spacecraft location. 3. To provide both RF and visible signals for recovery forces to determine spacecraft location. <p>The first function is accomplished by the TM transmitter.</p> <p>The second function is accomplished by the C-Band Beacon system.</p> <p>The third function is accomplished by the UHF Recovery Beacon and Flashing Recovery Light. In addition, the TM transmitter transmits an unmodulated carrier frequency after touch down to serve as a redundant system to the UHF Recovery Beacon.</p>				<pre> graph TD CBB[C-Band Bcn] --> PDiv((Pwr. Div.)) UHR[UHF Rec. Bcn] --> RFF[RF Filter] BEP[Batt. Elect Pack] --> FL[Flashing Recovery Light] TMD[TM Xmitr R/T Data] --> CS((Coax Sw)) PDiv --> PS[Phase Shifter] PDiv --> CBT[C-Band Tri-Helix Antenna System] RFF --> UHRA[UHF Recovery Antenna] CS --> NSA[Nose Stub Antenna] CS --> DA[Descent Antenna] </pre> <p>26V 453CPS</p>			

SYSTEM FUNCTIONAL DESCRIPTION BBQ SPACECRAFT		1. SECURITY CLASSIFICATION (U)		2. DATE 12 Nov. 1965 3. REPLACES PREVIOUS DATED	
4. PROGRAM IDENTIFICATION CODE 3000		5. CONTRACT/CONTRACT NUMBER MAC		6. SYSTEM NAME	
7. SYSTEM NAME		8. SECURITY CLASSIFICATION		9. SECURITY CLASSIFICATION	
10. SUB SYSTEM/MAJOR COMPONENT		11. FUNCTIONAL CHARACTERISTICS		12. SYSTEM FUNCTIONAL BLOCK DIAGRAM	
F. Instrumentation System and Recording		<p>The instrumentation system will consist of existing elements of the NASA Gemini, such as multiplexers, and signal conditioners.</p> <p>The spacecraft instrumentation system is devoted exclusively to the data acquisition function and performs the following:</p> <ol style="list-style-type: none"> Accepts signals from the sequential, electrical, reentry module propulsion, and guidance and control systems through sensing devices included as components of these systems; Senses structural signals (e.g., vibrations sound, temperature) aerodynamic pressures, and cabin pressures through transducers included within the instrumentation system; Provides suitable signal-conditioning equipment to adapt signals to the input requirements of coding equipment; Provides suitable equipment to code data for telemetry and recording on tape; Provides tape recording equipment for all telemetry transmissions, thus providing full-time PCM data collection for ground playback and evaluation; Provides equipment for onboard recording and sensing of specific signals (e.g., high-frequency vibration sensors), for which the normal operational and development instrumentation provided is not adequate; 		<p>The diagram illustrates the instrumentation system architecture. It starts with various sensors: Acoustic Noise Sensors, Temp Sensors, Pressure Sensors, Signal Conditioner, and Other systems effect inputs. These feed into a series of multiplexers: Hi-Level Multiplexer, Lo-Level Multiplexer, and another Lo-Level Multiplexer. The outputs of these multiplexers go to a PCM Tape Recorder and an R.F. XMR. There are also direct inputs to a Voltage Control Oscillators block, which feeds into an Analog Tape Recorder (7 track). The system also includes a Wide Band Recording System, Adapter Instrumentation, and an S/C ADAPTER. The S/C ADAPTER includes Attenuator Circuits, Pressure Transducers, and Sound Pressure Levels, all connected to a Martin Per Supply and a Martin SSB LABORATORY.</p>	



SYSTEM FUNCTIONAL DESCRIPTION HSQ SPACECRAFT		1. SECURITY CLASSIFICATION (U)		2. PAGE 199,7	
3. TEST PROGRAM TITLE T VII SIS/MOL-HSQ		4. PROGRAM REQUIREMENT CODE 3900		5. DATE 12 NOV. 1965	
6. SUB SYSTEM/MAJOR COMPONENT		7. SYSTEM CODE		8. REPLACES PAGE(S)	
9. FUNCTIONAL CHARACTERISTICS		10. CONTRACTOR/CONTRACT NUMBER MAC		11. DATED	
12. SYSTEM FUNCTIONAL BLOCK DIAGRAM					
F. Instrumentation System and Recording (continued)		RF transmission of instrumentation data in the reentry vehicle is via the Communication System Telemetry Transmitter. Transmission of this data is in real time as defined on page 230.			

SYSTEM FUNCTIONAL DESCRIPTION HSQ SPACECRAFT			1. SECURITY CLASSIFICATION (U)	2. DATE 12 NOV. 1965
3. TEST PROGRAM TITLE TIII SLS/MOL-HSQ	4. PROGRAM REQUIREMENT CODE 3900	5. SYSTEM CODE	6. REVISIONS PAGE(S) DATED	
7. SUB SYSTEM/MAJOR COMPONENT			8. CONTRACT/ORDER NUMBER MAC	
9. FUNCTIONAL CHARACTERISTICS			10. SYSTEM FUNCTIONAL BLOCK DIAGRAM	
G. Pyrotechnics and Separation System The re-entry module contains the parachute deployment ordnance, the RCS valve ordnance, and the R & R section separation ordnance. The Gemini A 3-point attachment ordnance will be used for separation of the re-entry module from the adapter section. See HSQ Pyrotechnic Devices Drawing (PRD Page 156) for location of pyros.				

11. SECURITY CLASSIFICATION (U)

RANGE USER'S INSTRUMENTATION (SURFACE/AIR/OTHERS)				1. SECURITY CLASSIFICATION		2. PAGE 1A	
A. TEST PROGRAM		B. PROGRAM REQUIREMENT NO.		C. SYSTEM CODE		3. DATE 12 NOV. 1965	
TIII SLS/MOL-HSQ		3900		MAC		4. REPLACES PAGE#	
10. TEST ITEM NO.		11. TEST CODE		12. BRIEF DESCRIPTION OF ALL RANGE USER'S ELECTRONIC, OPTICAL AND OTHER GROUND INSTRUMENTATION EQUIPMENT TO BE USED DURING THE TEST PROGRAM		5. CONTRACTOR	
						DATED	
1	HSQ	Launch Control Center (LCC) (Payload Room #1)	1	VIB	Control Center for Preflight Evaluation and Launch.		
2		Operational Ground Equipment Van #1 (OGE Van #1)	1	AGE Building	Provide Remote Control and Power for Spacecraft until Launch also Evaluate Guidance and Control System.		
3		Operational Ground Equipment Van #2 (OGE Van #2)	1	AGE Building	Evaluation of Sequential, Re-entry Control, Communication, Crewman Simulator and Attitude Control Systems.		
4		Telemetry Van (T/M Van)	1	VIB	Preflight Evaluation of Airborne Telemetry System.		
5		PCH, discrete function display, EMR, 56-9001B4.	9	LCC			
6		PCH, Digital Analog Display, EMR, 56-9001A4.	17	LCC			
7		Oscilloscope, Brush, RF1783-71.	2	OGE Van #1			
8		Recorder TI DM917185-1.		OGE Van #1			
9		Recorder, Modified.	3	OGE Van #2			
10	HSQ	Recorder, Brush, RD 268200.	1	OGE Van #2			

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1. SECURITY CLASSIFICATION (U)

5. REVISION NO. 17

RANGE USERS' INSTRUMENTATION (SURFACE/AIR/OTHERS)				1. SECURITY CLASSIFICATION	
TII SLS/MOL-HSQ				(U)	
5. TEST PROGRAM		6. PROGRAM REQUIREMENT NO.		8. CONTRACTOR	
TII SLS/MOL-HSQ		3900		MAC	
BRIEF DESCRIPTION OF ALL RANGE USER'S ELECTRONIC, OPTICAL AND OTHER GROUND INSTRUMENTATION EQUIPMENT TO BE USED DURING THE TEST PROGRAM					
10. ITEM NO.	11. TEST CODE	12. TYPE	QTY	LOCATION	PURPOSE/FUNCTION
11	HSQ	Receiver, HF, Collins, R-390.	1	OGE Van #2	
12		Spectrum Anal Display, Polarad, SA-84.	1	OGE Van #2	
13		Spectrum Display Unit, Vitro, NC 200.	1	OGE Van #2	
14		Receiver, UHF, Vitro, NC 1501.	1	OGE Van #2	
15		Range Extender, Vitro, REV-100.	1	OGE Van #2	
16		Oscilloscope, Brush, RF 1783-71.	2	OGE Van #2	
17		Oscilloscope, CEC 5-119P4-36-01.	-	OGE Van #2	
18		Oscilloscope, CEC 5-119P4-50.	-	OGE Van #2	
19		Receiver, TM (215-260 mc), DEI, TMR-5A.	2	T/M Van	
20		Vacuum Tube, Voltmeter, HP, 400DR.	1	T/M Van	
21		Multicoupler, TM, DEI, TMC-4.	1	T/M Van	
22		Electronic Counter, HP, 523CR.	1	T/M Van	
23		TM Display Unit, DEI, TDU-4.	1	T/M Van	
24		DC Digital Voltmeter, HP, 405CR.	1	T/M Van	
25	HSQ	Tape Recorder, Ampex FR60, 7 Track Modified.	2	T/M Van	

RANGE USERS' INSTRUMENTATION (SURFACE/AIR/OTHERS)				1. SECURITY CLASSIFICATION	
A. TEST PROGRAM		B. PROGRAM REQUIREMENT		C. CONTRACTOR	
TIII SLS/HOL-HSQ		NO. 3900		NAC	
12. BRIEF DESCRIPTION OF ALL RANGE USER'S ELECTRONIC, OPTICAL AND OTHER GROUND INSTRUMENTATION EQUIPMENT TO BE USED DURING THE TEST PROGRAM		7. SYSTEM CODE		3. DATE 12 NOV. 1965	
13. TEST ITEM NO.		14. TYPE		15. QUANTITY	
16. TEST CODE		17. LOCATION		18. PURPOSE/FUNCTION	
26	HSQ	Oscilloscope, Tektronix, RM35A.	1	T/M Van	
27		PCM Signal Simulator, EMR, 285-0537.	1	T/M Van	
28		Digital Recorder, HP, 561RR.	1	T/M Van	
29		PCM Decom, EMR 285, (5 racks).	1	T/M Van	
30		Power Supply, NJE, QR-18-6.	2	T/M Van	
31		PCM Discrete Function Display, EMR 56-9001B4.	3	T/M Van	
32		Power Supply, NJE, ETC-32-20.	4	T/M Van	
33		PCM Digital to Analog Display, EMR 56-9001A4.	7	T/M Van	
34		Printer Drive, EMR, 56-9001B.	1	T/M Van	
35		Tape Search, Astro Data 6222.	1	T/M Van	
36		Printer Drive, EMR, 56-9001A3.	1	T/M Van	
37		Recorder, Brush, Mark 200.	5	T/M Van	
38		Printer Memory, Fabri Tek, MB-60X8-5-RS.	1	T/M Van	
39		Recorder, EMR, RE 3610.	2	T/M Van	
40	HSQ	Power Supply, NJE, ETC-32-10.	2	T/M Van	

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JUN 61

1. SECURITY CLASSIFICATION
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FORM 315
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REVISION NO.
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RANGE USERS' INSTRUMENTATION (SURFACE/AIR/OTHERS)				1. SECURITY CLASSIFICATION		2. PAGE 1A.3	
				(U)		3. DATE 12 Nov. 1965	
				8. CONTRACTOR MAC		4. REPLACES PAGE#	
						DATED	
5. TEST PROGRAM TIII SLS/MOL-HSQ				6. PROGRAM REQUIREMENT NO. 3900		7. SYSTEM CODE	
12. BRIEF DESCRIPTION OF ALL RANGE USER'S ELECTRONIC, OPTICAL AND OTHER GROUND INSTRUMENTATION EQUIPMENT TO BE USED DURING THE TEST PROGRAM							
10. ITEM NO.	11. TEST CODE	12. TYPE	13. QTY	14. LOCATION	15. PURPOSE/FUNCTION		
41	HSQ	Printer, CDC, 166.	1	T/M Van			
42		Power Supply, EHR, 56-9001U2.	1	T/M Van			
43		Discriminators.	-	T/M Van			
44		Display Driver, EHR, 56-9001B3.	1	T/M Van			
45		Voltage Controlled Oscillator.	-	T/M Van			
46		Line Driver, EHR, 56-9001D4.	1	T/M Van			
47		Line Driver, EHR, 56-9001U3.	1	T/M Van			
48		Computer, Word Display, EHR, 56-9001J3.					
49	HSQ	Discrete Function Patch and Storage, EHR, 56-9001L.					



AFMTC FORM 315 JUN 61 PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

1. SECURITY CLASSIFICATION (U)

5. REVISION NO. 17

INSTRUMENTATION - RECEIVERS (SURFACE/AIR/OTHERS)		1. SECURITY CLASSIFICATION (U)		2. PAGE 102	
3. DATE 12 Nov. 1965		4. REPLACES PAGE(S)		5. DATED	
6. PROGRAM REQUIREMENT CODE 3900		7. SYSTEM CODE		8. CONTRACTOR MAC	
9. PROGRAM TITLE TII SLS/MOL-HSQ		10. SECURITY CLASSIFICATION (U)		11. TEST CODE	
12. RECEIVER CHARACTERISTICS		13. ANTENNA CHARACTERISTICS		14. PURPOSE AND REMARKS	
A. LOCATION: TM Station B. TYPE: Telemetry Receiver C. MODEL: THR5A D. MANUFACTURER: Defense Electronics E. NO. OF EQUIPMENTS: FIXED OR MOBILE: 2 Fixed F. RECEIVING FREQ. TOLERANCES IN PERCENTAGE: 0.005 G. METHOD OF RECEIVER TUNING: CONTINUOUS Crystal H. INTERMEDIATE FREQ. 10 MC & R.V.F.O. I. NCVR. SELECTIVITY IN DB: 300, 200 & 8000 J. NCVR. SENSITIVITY: 3 Microvolt DBM K. LOCAL OSCILLATOR FREQUENCY (ABOVE OR BELOW): 245-290 MC L. SPURIOUS RESPONSE REJECTION: 60 DB M. CODED AND/OR MODULATION: PCM/TM N. ARE THERE AVAILABLE SPECTRUM ANALYSIS REPORTS ON THIS RECEIVER? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO IF YES, PROVIDE 2 COPIES TO MTRCF		A. LOCATION: VIB B. TYPE: Helix C. MODEL: 59900H D. MANUFACTURER: Andrew Corporation E. DIRECTIVITY AND BEAMWIDTH IN AZIMUTH & ELEVATION: 30° F. RATE OF ROTATION, INDICATE IF FIXED: Fixed G. FREQ. RANGE OF ANTENNA: 216-260 MC H. POLARIZATION: Right Hand Circular I. IS THERE AVAILABLE A SPECTRUM ANALYSIS REPORT ON THIS ANTENNA? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO J. ANTENNA GAIN AT USING FREQUENCY: 13 db peak gain.		Used for checkout of telemeter airborne package Open loop operation.	

OCCUPATIONAL HAZARDS - MEDICAL				1. SECURITY CLASSIFICATION (U)		2. PAGE 170	
5. PROGRAM TITLE TIII SLS/MOL-HSQ		6. PROGRAM REQUIREMENT NO. 3900		7. SYSTEM CODE		3. DATE 12 NOV. 1965	
10. ITEM NO.		11. TEST CODE		12. REPORT NAME		4. REPLACES PAGE(S) DATED	
1.		* <u>PROPELLANTS AND OTHER TOXIC OR HAZARDOUS MATERIALS.</u>		13. DATE REPORT WILL BE SUPPLIED		14. DATE REPORT WILL BE SUPPLIED	
		a. Chemical and Physical Properties.		To be supplied.			
		b. Toxicity - Acute and Chronic.					
		c. Recommended First Aid and Treatment.					
		* <u>RADIATION HAZARDS.</u>					
		a. Ionising.					
		b. Radio Frequency.					
		* <u>ACOUSTIC HAZARDS.</u>					
		* <u>BLAST PARAMETERS FOR .4 PSI AND .65 PSI.</u>					
		a. TNT Equivalent.					
		b. Hazard Radii.					
		* <u>PROTECTIVE EQUIPMENT NEEDED.</u>					
		* <u>HUMAN FACTORS ANALYSIS.</u>					
		* <u>Mandatory Report</u>					



SUMMARY OF FREQUENCY UTILIZATION										1. SECURITY CLASSIFICATION		
3. PROGRAM TITLE TIII SLS/MOL-HSQ					6. PROGRAM REQUIREMENT CODE 3900		7. SYSTEM CODE		8. CONTRACTOR MC,MAC		2. PAGE 190 3. MAY 12 NOV. 1965 4. REPLACES PAGE(S) DATED	
10. ITEM NO.	11. TEST CODE	12. FREQUENCY	13. EMISSION CHARACTERISTICS	14. PURPOSE	PROTECTION REQUIRED	16. EST. TIME OF USAGE PRE-OP. LAUNCH		17. SPECIAL MONITORING REQUESTS				
1	HSQ	236.2	PCM/TM	Airframe Telemetry (lab)	+ 500 KC of C.F.	2:00	30 Min.	This time is estimated and may be longer depending on recovery circumstances. Transmission will occur only in down range impact area.				
2	HSQ	231.9	SSB/TM	Acoustic and Vibration Data (lab)	+ 500 KC of C.F.	2:00	30 Min.					
3	HSQ	259.7 MC	PCM/TM	Real Time Gemini TLM	+ 500 KC of C.F.	20 hr	1.5 hr					
4	HSQ	5765/ 5690 MC	Pulse Radar 1000 watt max PRF 2000 PPS	C-Band Beacon (Gemini)	normal	---	----					
5	HSQ	243.0 MC	243.0 Pulse/CW 50 Watts Peak	Recovery Beacon (Gemini)	+24.3 kc of C.F.	2 hr	2 hr					

AFMTC FORM 31X
JUN 61



1. SECURITY CLASSIFICATION
(U)

9. REVISION NO.

HSQ SPACECRAFT		GENERAL METRIC DATA		1. SECURITY CLASSIFICATION (U)		2. PAGE 210	
3. TEST PROGRAM TITLE TIII SLS/MOL-HSQ		4. PROGRAM REQUIREMENT CODE 3900		5. SYSTEM CODE		6. DATE 12 Nov. 1965	
7. TEST ITEM NO. 12		8. COORDINATE SYSTEM PREFERRED, POINT OF ORIGIN, NOTES, REMARKS AND OTHER GENERAL METRIC DATA		9. CONTRACTOR MAC		10. REPLACES PAGE(S) DATED	
GENERAL METRIC DATA							
1	HSQ	<u>Coordinate System</u> <p>The coordinate system to be used for expression of Metric Data will be the Range Rectangular (XYZ) Coordinate System (right handed) with the positive X axis coinciding with the flight azimuth. The point of origin will lie at mean sea level under the gravity vertical centerline of the launch vehicle on Pad 40.</p>					
2	HSQ	<u>Position</u> <p>Position is defined as the position of the most forward part of the flight vehicle.</p>					
3	HSQ	<u>Flight Vehicle Attitude</u> <p>Positive roll is clockwise when viewed from the aft end of the F/V, positive yaw is nose right when viewed from aft end of the F/V, and positive pitch is nose up.</p>					
4	HSQ	<u>Data Reduction</u> <p>AFETR will process and reduce metric data from range-operated optical and electronic tracking devices as necessary to meet the requirements of this document. Estimates of accuracy will be provided for all data. The methods which are employed for smoothing and for establishing accuracy estimates will be provided to the test agency. A breakdown of the estimate of total error into proportional estimates of random, systematic and other errors will be required; also, a tabulation is required which will correlate the accuracies of the processed data with the applicable data accuracy requirements specified in this document. A qualitative explanatory statement in each final data report will be required indicating the discrepancies which contributed to the data inaccuracies.</p>					



HSQ SPACECRAFT		GENERAL METRIC DATA		1. SECURITY CLASSIFICATION (U)		2. PAGE 210.1	
3. TEST PROGRAM TITLE TIII SLS/MOL-HSQ		4. PROGRAM REQUIREMENT CODE 3900		5. CONTRACTOR MAC		6. DATE 12 NOV. 1965	
7. SYSTEM CODE		8. REPLACES PAGE(S)					
COORDINATE SYSTEM PREFERRED. POINT OF ORIGIN, NOTES, REMARKS AND OTHER GENERAL METRIC DATA							
10. ITEM NO.	11. TEST CODE	12.					
5	HSQ	<p><u>Smoothing</u></p> <p>Accuracy requirements during powered flight are stated in the absence of smoothing. If the random error components of the total error indicate that improvement can be achieved by smoothing, whereby the stated accuracy requirements can be better satisfied, smoothing intervals of up to a maximum of two seconds will be allowable during powered flight, unless noted otherwise. Smoothing intervals for unpowered flight data may be up to 10 seconds. If smoothing is used, end-point smoothing at trajectory discontinuities is required during the final portion of powered flight. Where smoothing is used copies of both the smoothed and unsmoothed data are mandatory.</p>					
6	HSQ	<p><u>Editing of Smoothed Data</u></p> <p>When smoothing is applied to the reduced data, data editing will be allowed. Obviously incorrect data points may be removed as needed up to a maximum of 25% of the data points collected per second but no more than 10% in any 5-second period. A statement explaining method of editing and actual editing for a given set of data is required.</p>					
7	HSQ	<p><u>Best Estimate of Trajectory (BET)</u></p> <p>Best estimates of position and velocity trajectories mathematically combining data from all applicable instrumentation systems will be required as final data. These best estimates should be accompanied with error estimators as specified in Item 4, page 210. . Coordinate systems to be as specified on page 210, item 1, above.</p>					



PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

FORM 32 JUN 61

AFMTC

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1. SECURITY CLASSIFICATION
(U)

2. REVISION NO.

HSQ SPACECRAFT		GENERAL METRIC DATA			1. SECURITY CLASSIFICATION		2. PAGE	
3. TEST PROGRAM TITLE		4. PROGRAM REQUIREMENT CODE		5. SYSTEM CODE		6. CONTRACTOR		
7. TEST ITEM NO.		8. TEST CODE		9. DATE		10. REVISION NO.		
TIII SLS/MOL-HSQ		3900		(U)		210.2		
				MAC		DATE		
COORDINATE SYSTEM PREFERRED. POINT OF ORIGIN, NOTES, REMARKS AND OTHER GENERAL METRIC DATA								
8	HSQ	<p><u>Accuracy</u></p> <p>a. Accuracy requirements listed are for unsmoothed position data, and are stated in terms of coordinate dispersions of the cartesian data system. Accuracy requirements listed do not apply to data transmitted in real time since the real time data will not have all known errors removed.</p> <p>b. Accuracy is specified as the measure of the difference between the true value and the computed or reduced value, and is requested to be within the stated limits with a probability of 0.68 (i. e., one sigma accuracy requirements.)</p>						
9	HSQ	<p><u>Timing</u></p> <p>a. Timing correlation between tracking stations to be accurate within 2 milliseconds.</p> <p>b. Time of lift-off to be accurate to 1 millisecond.</p> <p>c. Time correlation of trajectory data to other flight events and recorded data is to be capable of resolution to 0.01 second (Class I) and to 0.001 second (Class II).</p>						
AFMTC FORM 32 JUN 61		PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.		1. SECURITY CLASSIFICATION		(U)		



HSQ LAUNCH VEHICLE				METRIC LAUNCH DATA				1. SECURITY CLASSIFICATION		2. PAGE	
3. PROGRAM FILE				4. PROGRAM REQUIRED CODE		5. SYSTEM CODE		6. CONTRACTOR		7. DATE	
THII SLS/MOL-HSQ				3900				MAC		211-2 12 NOV 1965	
8. ITEM NO.	9. TEST CODE	10. DATA REQUIRED	11. INTERVAL (RANGE-ALTITUDE-TIME)	12. DATA POINTS/SEC	13. REDUCED DATA ACCURACY			14. PURPOSE AND REMARKS			
					CLASS I	CLASS II	CLASS III				
5	HSQ	Launch Vehicle attitude, pitch and yaw	T-2 seconds to stage III cut-off.	10 or limit of data acquisition equipment.		1°					



AFMTC FORM 32A JUN 61 PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

1. SECURITY CLASSIFICATION

(U)

9. REVISION NO.

METRIC TERMINAL DATA										1. SECURITY CLASSIFICATION (U)		2. PAGE 214	
3. TITLE TIII SLS/MOL-HSQ										4. CONTRACTOR MAC		5. DATE 12 Nov. 1965	
6. PROGRAM REQUIREMENT CODE 3900										7. SYSTEM CODE		8. REPLACES PAGE(S)	
9. DATA POINTS/SEC										10. CLASS I		11. CLASS II	
12. DATA POINTS/SEC										13. CLASS I		14. CLASS II	
15. DATA POINTS/SEC										16. CLASS I		17. CLASS II	
18. DATA POINTS/SEC										19. CLASS I		20. CLASS II	
1	HSQ	Position X, Y, Z	Interval (Range-Altitude-Time) Stage III Cutoff to LOS	10	10 feet	10	10 feet	10	10 feet	10	10 feet	10	10 feet
2	HSQ	Velocity X, Y, Z, and total vel.	Same as Item 1	Same as Item 1	2 ft/sec	2 ft/sec	2 ft/sec	2 ft/sec	2 ft/sec	2 ft/sec	2 ft/sec	2 ft/sec	2 ft/sec
3	HSQ	Acceleration X, Y, Z, and total accel.	Same as Item 1	Same as Item 1	2 ft/sec ²	2 ft/sec ²	2 ft/sec ²	2 ft/sec ²	2 ft/sec ²	2 ft/sec ²	2 ft/sec ²	2 ft/sec ²	2 ft/sec ²
4	HSQ	Special Parameters listed in Item 4, P.211	Same as Item 1	Same as Item 1									
5	HSQ	Aerodynamic parameters of M - Mach Number q _d - Dynamic Pressure (lbs/ft ²) R _n - Reynolds number per ft. ($\frac{1}{ft}$)	Same as Item 1	Same as Item 1									

ENGINEERING SEQUENTIAL DATA										1. SECURITY CLASSIFICATION (U)		2. PAGE 220	
										3. DATE 12 Nov. 1965		4. REPLACES PAGE(S)	
5. TEST PROGRAM TIII SLS/MOL-HSQ										6. PROGRAM REQUIREMENT 3900		7. SYSTEM CODE	
										8. CONTRACTOR MC,MAC		DATED	
										13. INTERVAL (RANGE-ALTITUDE-TIME)		14. ITEM TO BE VIEWED OR COVERED	
										15. PURPOSE AND REMARKS			
										Any MOL-HSQ/peculiar requirements will be supplied at a later.			

AFMTC FORM 32E MAY 61 PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.



1. SECURITY CLASSIFICATION (U)
5. REVISION NO. MT

TELEMETRY DATA				1. SECURITY CLASSIFICATION (U)		2. PAGE 230.1	
3. PROGRAM TITLE TIII SLS/MOL-HSQ		4. PROGRAM REQUIREMENT CODE 3900		5. SYSTEM CODE		6. DATE 12 NOV. 1965	
7. CONTRACTOR MC/MAC		8. DATED		9. REPLACES PAGE#		10. TEST CODE	
NOTES, REMARKS, SPECIAL INSTRUCTIONS, ETC.							
1	All	Note	<p>Telemetry recording will utilize predetection techniques for PCM/CM and SSB/FM data recording. Predetection is a Class I requirement at all supporting AMR stations having predetection capability. Predetection frequency shall be 900 KC. Predetection recording shall be at 120 ips \pm 0.25%. Wow and Flutter \pm 0.25% from 0.2 cps to 10 KC, frequency response 3 db from 400 cps to 1 MC. S/N ratio 24 db from 400 cps to 1 MC.</p> <p>Original PCM and SSB predetection tapes are required whenever available.</p> <p>All magnetic tapes furnished by the AFMTC for data purposes, shall be new, unspliced stock. The data shall be recorded on 7-track, 1/2" wide tapes, using 14" diameter tape reels. Tape type shall be Scotch 951 or equivalent. Prior to usage the magnetic tape shall be run through the recorder in a normal record mode, repacked on the supply reel and degaussed.</p> <p>Recordings are required from T-240 seconds to loss of data, at Station 1, and from data acquisition to loss of data at down range stations.</p> <p>The signal strength at the receiver AGC must be recorded on magnetic tape for all PCM/FM and SSB/FM rf carriers. All stations supporting the test shall record the RF signals strength and center frequency in real time on pen recorders. These data should be calibrated logarithmically with an accuracy of \pm 3 db from 1-5000 uv at station 1, 1-1000 uv at down range stations and the ORVs, 1-1500 uv on aircraft. The calibration should be applied to the preamplifier input.</p> <p>Magnetic tape recordings of each telemetry link are a Class I requirement (see track assignment pages 230.3 - 203.4).</p> <p>Precision reels and electromagnetic shielded cans shall be used for PCM serial and SSB magnetic tapes.</p> <p>The preflight telemetry calibration of the SSB/FM will be generated by MC during the last 90 seconds prior to lift-off, and recorded by AFMTC on the tape listed under item 15 page 230.4.</p> <p>It is requested that AFMTC generate and record a 100 KC wow and flutter compensation signal to be recorded on all magnetic tapes as stated in the tape formats listed on pages 230.3 - 230.4.</p>				
2	All						
3	All						
4	All						
5	All						
6	All						
7	All						
8	All						
9	All						



TELEMETRY DATA				1. SECURITY CLASSIFICATION		2. PAGE 230.2	
5. PROGRAM TITLE		6. PROGRAM REQUIREMENT CODE		7. SYSTEM CODE		3. DATE 12 NOV. 1965	
TIII SLS/MOL-HSQ		3900		8. CONTRACTOR MC/MAC		4. REPLACES PAGE(S)	
ITEM NO.	TEST CODE	NOTE	TEST CODE:				
10	All		<p>NOTES, REMARKS, SPECIAL INSTRUCTIONS, ETC.</p> <p>It is required that analog records of the TLM-18 azimuth and elevation, orientation indications and tracking error signals from all stations be recorded.</p>				
11	All		<p>PCM/FM and SSB/FM telemetry data are to be recorded on magnetic tape recorders having a 1 MC minimum band width for approximately 15 minutes per test for CST.</p>				
12	All		<p>All receivers shall have a bandpass of 500 KC and intermediate frequency of 900 KC</p>				
13	All		<p>One ship, to be identified by AFETR, will be required to monitor the end of stage III burn, Gemini separation, and stage III retro. Possible location of this ship would be 14.2° N. latitude and 48.9°W. longitude.</p>				



TELEMETRY DATA		1. SECURITY CLASSIFICATION (U)		2. PAGE 230.3		
3. PROGRAM TITLE TIII SLS/MOL-HSQ		6. PROGRAM REQUIREMENT CODE 3900		3. DATE 12 Nov. 1965		
7. SYSTEM CODE		8. CONTRACTOR HC/MAC		4. REPLACES PAGE(S)		
NOTES, REMARKS, SPECIAL INSTRUCTIONS, ETC.		DATED		TEST CODE		
ITEM NO.	TEST CODE	NOTE	<p>14 All</p> <p>Telemetry tape format for flight test data transmitted over the PCM/FM telemetry links described on pages 152.1 and 152.2.</p> <p><u>PRIMARY RECORDER</u></p> <p><u>TRACK</u></p> <ol style="list-style-type: none"> <ol style="list-style-type: none"> 1 pps timing (B-1), 7.35 KC RDB, Channel 11 100 pps timing (D-5), 22 KC RBD, Channel A Voice annotation, 40 KC RBD Channel C and 70 KC RBD, Channel E Receiver A - Flight Test Data - Sim Lab PCM/FM (left hand circular polarization) Receiver B - Gemini PCM/FM (right hand circular polarization) Unassigned. Receiver C - Flight Test Data - Sim Lab PCM/FM (right hand circular polarization) Receiver D - Gemini PCM/FM (left hand circular polarization) <ol style="list-style-type: none"> Signal Strength of Receiver C 5.4 KC RBD Channel 10 Signal Strength of Receiver D, 10.5 KC RBD Channel 12 100 KC reference (wow and flutter), direct 17 KC Speedlock, direct 			



TELEMETRY DATA				1. SECURITY CLASSIFICATION		2. PAGE 230.4	
3. PROGRAM TITLE		TIII SLS/MOL-HSQ		3. DATE 12 NOV. 1965		4. REPLACES PAGE(S)	
5. PROGRAM REQUIREMENT CODE 3900		7. SYSTEM CODE		8. CONTRACTOR MC/MAC		DATED	
ITEM NO.		TEST CODE		NOTE		TEST CODE:	
15	All	<p>Telemetry format for vibration and acoustic data transmitted over sim lab SSB/FM telemetry link described on Page 152 should be as follows:</p> <p><u>PRIMARY RECORDER</u></p> <p><u>TRACK</u></p> <ol style="list-style-type: none"> 1. Unassigned 2. Receiver E - Sim Lab acoustic and vibration SSB/FM (right hand circular polarization) 3. <ol style="list-style-type: none"> a. 1 pps timing (B-1), 7.35 KC RDB Channel 11 b. 100 pps timing (D-5), 22 KC RDB Channel A c. Voice annotation, 40 KC RDB Channel C and 70 KC RDB Channel E 4. Receiver E - Sim Lab Acoustic and Vibration SSB/FM (right hand circular polarization) 5. Unassigned 6. Receiver F - Sim Lab Acoustic and Vibration SSB/FM (Left hand circular polarization) 7. <ol style="list-style-type: none"> a. Signal strength of Receiver G, 5.4 KC RDB Channel 10 b. Signal strength of Receiver H, 10.5 KC RDB Channel 12 c. 100 KC reference (wow and flutter), direct d. 17 KC Speedlock, direct <p>NOTE: Standard AFETR practice of providing a backup recorder is requested. Data will only be required from one source.</p>					



Spacecraft		OTHER DATA		1. SECURITY CLASSIFICATION		2. PAGE	
3. PROGRAM TITLE		4. PROGRAM REQUIREMENT CODE		5. SYSTEM CODE		3. DATE 12 NOV. 1955	
TIII SLS/MOL-HSQ		#3900				4. REPLACES PAGE(S)	
				6. CONTRACTOR		DATED	
				MAC			
11. TEST CODE		12. DATA REQUIRED, INTERVAL, ACCURACY, PURPOSE, REMARKS, ETC.					
1 HSQ		Telemetry data plus data which is not transmitted in real time is recorded on magnetic tape by a tape recorder on-board the HSQ Spacecraft. This tape must be removed from the spacecraft, after recovery, and returned to MAC personnel at CKAFS within 10 calendar days after launch.					
2		Real time radar plotting boards, which are in addition to any Range Safety plotting boards, are required in a suitable location to provide range vs altitude, altitude vs time, and velocity vs time, from lift-off to the loss of radar track at the farthest downrange station from which this track may be sent in real time to Station #1.					
3		Signal strength and AGC recordings of the radar tracking signals as received at ETR Stations #1, 3, 7, 9.1, 12 and instrumentation ships are required.					
4		Recordings showing the telemetry signals deviation from center frequency are also required from ETR Stations #1, 3, 7, 9.1, 12 and instrumentation ships.					
5		A Preliminary Test Report showing a preliminary estimate of data coverage, AOS and LOS for the various stations, lift-off time, and impact time is required within two hours after launch for use during the post-flight review meeting.					
6		A Recovery Report is required within 15 WD after termination of the test. This report should include, but should not be limited to:					
		(a) The location of each component of the recovery force at lift-off.					
		(b) The touchdown time, and impact point.					
		(c) Time history covering contact and/or loss of contact with the re-entry vehicle by each component of the recovery force.					
		(d) Identifying members (air-sea type) and their approximate location with respect to the re-entry module during times the re-entry vehicle is out of contact. Probable reasons for no contact are desired.					
		(e) Activities and times required for:					
		(1) Air and sea recovery forces to locate and reach the re-entry vehicle.					
		(2) Deployment of para-divers and flotation gear.					
		(3) Attachment of flotation gear.					
		(4) Recovery and transport of the re-entry vehicle to ETR station #12.					
HSQ							



AFMTC FORM 32G
JUN 51
PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

1. SECURITY CLASSIFICATION
(U)

9. REVISION NO.

Spacecraft		OTHER DATA		1. SECURITY CLASSIFICATION		2. DATE 20 12 NOV 1965	
5. PROGRAM TITLE		TIII SLS/MOL-HSQ		7. SYSTEM CODE		8. CONTRACTOR	
9. PROGRAM REQUIREMENT CODE		3900		MAC		DATED	
10. TEST NO.		11. TEST CODE		12. DATA REQUIRED, INTERVAL, ACCURACY, PURPOSE, REMARKS, ETC.			
7	HSQ	<p>Color Motion Picture (documentary) coverage of the recovery activities starting with re-entry vehicle sighting should be as complete as possible within the limitations of operating conditions.</p> <p>Extracts from the log of the operators of the telemetry receiving equipment at Stations 1, 3, 7, 9.1, 12 and instrumentation ships are required. These extracts should show:</p> <p>(a) Time of acquisition of signal (AOS).</p> <p>(b) Time of LOS (Loss-of-Signal).</p> <p>(c) Antenna azimuth and elevation at both AOS and LOS.</p> <p>(d) Unusual events, signals, etc., as observed.</p>					
9		<p>Extracts are required from the tracking radar operators' logs for each of the Stations #1, 3, 7, 9.1, 12 and the instrumentation ships. These extracts should show:</p> <p>(a) Peak Power</p> <p>(b) Pulse Width</p> <p>(c) Type Coverage (Beacon or Skin)</p> <p>(d) Antenna Polarization.</p> <p>(e) PRF</p> <p>(f) Coding, if any</p> <p>(g) Noise figure of the Radar</p> <p>(h) Acquisition Data</p> <p>(1) Antenna Azimuth in mils at AOS and LOS</p> <p>(2) Antenna Elevation in mils at AOS and LOS</p> <p>(3) Slant Range of vehicle in N.M. at AOS and LOS</p>					
10	HSQ	<p>(1) Deviations, as observed, from nominal frequency</p> <p>An electrical signal denoting "first motion" of the launch vehicle is required from an appropriate source delivered to the MAC telemetry van. This signal will then be imposed upon tape recordings, etc, as a timing signal. (28v nominal is desired).</p>					



HSQ SPACECRAFT				FORECASTS		1. SECURITY CLASSIFICATION		2. PAGE	
PROGRAM TITLE				TYPE DATA		3. DATE		4. RELEASE PAGE(S)	
TIII SLS/MOL-HSQ				3900		(U)		310	
1. TEST CODE				2. TIME REQUIRED		3. LOCATION		4. DATED	
1. HSQ				T-12H		T-12H to T+12H		12 NOV. 1965	
<p>FORECAST PARAMETERS:</p> <p>Surface parameters, such as wind, visibility, cloud cover, precipitation, temperature, etc., will be required for the launch area and the landing area to predict the feasibility of launch and recovery operations. Upper air parameters will be required to predict exit and re-entry conditions. The 4th Weather GR., Det. 11, PAFB, Florida, will provide forecasts for the planned landing area and along the flight path, as well as forecasts for the launch area that must be originated prior to F-2 days, and will be available for consultation during launch and recovery activities.</p> <p>Times when weather parameters will be required and minimum conditions at given locations will be specified in the applicable OR for each test.</p>				<p>15. VALID TIME</p> <p>T-12H to T+12H</p>		<p>16. LOCATION</p> <p>Recovery Area</p>		<p>17. PURPOSE AND REMARKS</p> <p>Assure positive recovery conditions within 12 hour maximum recovery time limit.</p>	

1. SECURITY CLASSIFICATION

(U)



AFMTC FORM 33 PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

JUN 61

FORECASTS									
1. PROGRAM TITLE		2. SLS/MOL-HSQ		3. PROGRAM REQUIREMENT CODE		4. SYSTEM CODE		5. SECURITY CLASSIFICATION	
10. ITEM NO.		11. TEST CODE		12. TIME REQUIRED		13. FORECAST PARAMETERS (TYPE DATA, SURFACE, UPPER AIR, ALTITUDE, INTERVAL)		14. VALID TIME	
15. LOCATION		16. PURPOSE AND REMARKS		17. SECURITY CLASSIFICATION		18. SECURITY CLASSIFICATION		19. SECURITY CLASSIFICATION	
2	HSQ	F-5D			3900	Forecast of the surface conditions, such as wind, visibility, cloud cover, precipitation, temperature, etc., are required for the launch area and for the primary boost phase abort impact areas. For water landing areas, forecasts of sea conditions are required, including the average wave height and period, and the wave spectrum if possible.	F-5D through T+12	Launch Recovery and flight path areas.	To determine feasibility of selected launch and time.
3	HSQ	F-3D				Confirm or modify F-5D Forecast.	F-3D through T+12	Same	Same
4	HSQ	F-2D				Confirm or modify F-3D forecast and include upper air wind conditions to 50,000 feet.	F-2D through T+12	Same	Same
5	HSQ	F-1D through S/C Retrieval				Confirm or modify F-2D forecast and include upper air pressure, humidity, temperature, and winds to 50,000 ft. Forecasts of the sea surface conditions in the recovery area for the next day and for the nominal recovery day are required at this time. A synoptic weather briefing of weather conditions is required about the flight path with emphasis on severe weather, such as hurricanes and typhoons which would preclude safe recovery. Forecasts of surface conditions will include ground conditions, such as dry, muddy, flooded, etc., and/or sea conditions.	F-1D through S/C Retrieval	Launch and landing areas.	To determine feasibility of selected launch date and time, and recovery date.



FORECASTS										1. SECURITY CLASSIFICATION (U)		2. PAGE 310.2	
										3. DATE 12 NOV. 1965		4. REPLACES PAGE(S)	
5. PROGRAM TITLE TIII SLS/MOL-HSQ										6. PROGRAM IDENTIFICATION CODE 3900		7. SYSTEM TIME	
8. FORECAST PARAMETERS TYPE DATA SURFACE UPPER AIR ALTITUDE INTERVAL										9. LOCATION		10. VALID TIME	
11. TEST CODE										12. TIME REQUIRED		13. PURPOSE AND REMARKS	
6	HSQ	T-6H through S/C retrieval.	Confirm or modify F-1D forecasts.										Final confirmation of selected launch time.
7	HSQ	F-Day through S/C Retrieval	Landing area forecast as defined above.										To determine feasibility of selected landing date and area.
8	HSQ	Landing -6H	Same as above.										Confirm landing time and area feasibility.



AFMTC FORM 33 JUN 61 PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

1. SECURITY CLASSIFICATION
(U)

2. REVISION NO.

OBSERVATIONS										1. SECURITY CLASSIFICATION		2. PAGE	
										(U)		320	
												3. DATE 12 NOV. 1965	
												4. REPLACES PAGE(S)	
										5. CONTRACTOR		DATED	
										MAC			
6. PROGRAM REQUIREMENT CODE 3900										7. SYSTEM CODE			
8. PROGRAM TITLE TII SLS/MOL-HSQ										9. SECURITY CLASSIFICATION		10. REVISION NO.	
										(U)			
10. ITEM NO.	11. TEST CODE	12. DATA REQUIRED	13. SURFACE		14. UPPER AIR		15. CLASS		16. PURPOSE AND REMARKS				
			TIME-MIN	LOCATION	ACCURACY -2	CLASS	TIME -MIN	LOCATION	INTERVALS	ALT - K FT	ACCURACY -2	CLASS	
1	HSQ	Wind velocity Wind direction Density Pressure Temperature	T-O + 1H	CKAFS	Density to +2%	II	T-O + 1H	Launch Area	1000 ft.	Measured to 270 and extrapolated to 300.	Desired accuracy for density is to be within 2%.	II	Rocket sounding from upper limit of rawinsonde data to at least 270,000 feet.
2	HSQ	Wind velocity Wind direction Density Pressure Temperature	Time of landing + 1H	Re-entry Area	Density to +2%	II	Time of landing + 1 hour	Reentry Area	1000 ft	Measured to 270 and extrapolated to 300.	Desired accuracy for density is to be within 2%.	II	Rocket sounding from upper limit of rawinsonde data to at least 270,000 feet.
3	HSQ	Wind velocity Wind direction Density Pressure Temperature	T-O (-) + 1H	Two ETR stations between Cape and Ascension	Density to +2%	II	T-O (-) + 1H	Two ETR stations between Cape and Ascension	1000 ft	Measured to 270 and extrapolated to 300.	Density to +2%.	II	Atmospheric properties along the flight path are required from the point of reentry to splash. One intermediate station should be selected as near the reentry point (approx. 800 n mi up-range c' should be selected near mi.-range to permit a mathematical construction of a complete flight-path atmosphere (lift-off thru splash) in the event measured values cannot be taken on the point of reentry.

OBSERVATIONS										1. SECURITY CLASSIFICATION		2. PAGE 320-1		
										(U)		3. DATE 12 Nov. 1965		
										4. CONTRACTOR		5. REPLACES PAGE(S)		
										MAC		DATED		
										7. SYSTEM CODE				
										8. PROGRAM REQUIREMENT CODE		3900		
										9. PROGRAM TITLE		TIII SLS/MOL-HSQ		
10. ITEM NO.	11. TEST CODE	12. DATA REQUIRED	13. TIME -MIN	14. LOCATION	15. SURFACE	16. ACCURACY - ±	17. CLASS	18. TIME -MIN	19. LOCATION	20. INTERVALS	21. ALT - FT	22. ACCURACY - ±	23. CLASS	24. PURPOSE AND REMARKS
4	HSQ	Wind velocity Wind direction Pressure Temperature Speed of Sound Density Relative humidity Absolute humidity Cloud cover and type Index of refraction.	T-0 T+12H	Landing Area - ETR Sta. 12		+ 2%	II	Time of landing + 12H	Reentry and Landing Area	Standard Rawinsonde Intervals 1000 ft	Maximum obtainable 50	Best Available +2%	II	In the event that spacecraft has not been recovered.

AFMTC FORM 33A JUN 61

PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

1. SECURITY CLASSIFICATION

(U)

9. REVISION NO.

1. FORM TITLE		2. MINIMA		3. SECURITY CLASSIFICATION (U)		4. DATE 12 Nov. 1965	
5. PROGRAM NO.		6. PROGRAM SECURITY CODE 3900		7. SYSTEM CODE		8. DATED	
9. ITEM NO.		10. TEST CODE		11. MINIMA MINIMUM CLOUD COVERAGE, SURFACE OR UPPER WIND VELOCITIES OR SHEARS, ICING, SEA STATE, ETC.)		12. CONTRACTOR MAC	
1		HSQ		The minima for the HSQ Gemini are as follows:			
2		HSQ		Surface wind (maximum velocity in launch area): 40 mph with predicted winds in excess of 60 mph.			
3		HSQ		Surface wind (maximum velocity in downrange recovery area): Surface wind velocity should be 30 knots or less.			
4		HSQ		Maximum wind velocity at altitude: 300 fps.			
5		HSQ		Maximum wind shear: .037 fps/ft. combined with maximum wind velocity.			
6		HSQ		Icing: None			
7		HSQ		State of sea (recovery area): See Item 2.			
8		HSQ		State of sea (launch abort recovery region): See Item 1 and 2.			
				Cloud cover: Information concerning cloud cover in the launch area as observed by long focal length cameras will be supplied to the Operations Director by the Network Controller in the Mission Control Center.			
				Note: Notify Operations Director if any of the above conditions are forecast.			



COMMUNICATIONS - GENERAL			1. SECURITY CLASSIFICATION UNCLASSIFIED	2. PAGE 419
TIII SLS/MOL-HSQ			3. DATE 12 NOV. 1965	4. REPLACES PAGE#
6. PROGRAM REQUIREMENT NO. 3900			7. SYSTEM CODE	8. CONTRACTOR MC
GENERAL DESCRIPTION OF INTER-STATION COMMUNICATIONS				
All requirements are identified in detail in Contract Document SSD-CR-63-215, "Integrated Communications Requirements Plan."				
11. TEST PROGRAM NO. 12				
12. TEST CODE				

Spacecraft				COMMUNICATIONS - GENERAL		1. SECURITY CLASSIFICATION		2. PAGE 410.1	
3. TEST PROGRAM		4. PROGRAM REQUIREMENT NO.		7. SYSTEM CODE		3. DATE 12 NOV 1965		4. REPLACES PAGE#	
TIII SLS/MOL-HSQ		3900				A. CONTRACTOR MAC		DATED	
10. ITEM NO.		11. TEST CODE		12. GENERAL DESCRIPTION OF INTER-STATION COMMUNICATIONS					
1	HSQ	Under Sea Cable - The telemetry data (51.2 KB-NRZC PCM format) recorded at ETR stations #5, #7, & #9.1 shall be transmitted via submarine cable to ETR sta. #1 for recording on magnetic tape. This transmission shall be accomplished within 6 to 8 hours after the HSQ spacecraft has impacted.							
2	HSQ	High Frequency Radio - This support is required to handle Flight Progress Reports and general voice communications between ETR stations 1, 3, 7, 9.1 & 12.							
3	HSQ	VHF & UHF Radio - This support is required for Voice Communications between recovery aircraft, ships and ETR Station #12.							
4	HSQ	Green Phones - This support requirement is defined on page 432.1.							
5	HSQ	MITOC - This support requirement is defined on 431 series of pages.							



AFMTC FORM 34L NOV 61 PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

1. SECURITY CLASSIFICATION

(U)

2.

REVISION NO.
BY

NETWORK DRAWING (Radio and Wire)				1. SECURITY CLASSIFICATION UNCLASSIFIED	2. PAGE 411
3. TEST PROGRAM TIII SLS/MOL HSQ	6. PROGRAM REQUIREMENT NO. 3900	7. SYSTEM CODE	8. CONTRACTOR MC	9. DATE 12 Nov. 1965	10. REPLACES PAGE(S) ---
11. COMMUNICATIONS NETWORK DRAWING				DATED ---	TEST CODES ALL
<p>All requirements are identified in detail in Contract Document SSD-CR-63-215, "Integrated Communications Requirements Plan."</p>					



1. SECURITY CLASSIFICATION (U)		2. PAGE 411.1 3. DATE 12 NOV 1965 4. REPLACES PAGE(S)	
5. TEST PROGRAM TIII SLS/MOL-HSQ		6. CONTRACTOR MAC	
7. SYSTEM CODE		8. PROGRAM REQUIREMENT NO. 3900	
10. COMMUNICATIONS NETWORK DRAWING			

TEST CODE: HSQ
Note: The numbers within the circles denote the capability indicated by corresponding item numbers on Page 410.


```

    graph LR
      ETR1((ETR #1  
1 2))
      ETR3((ETR #3  
1 2))
      ETR7((ETR #7  
1 2))
      ETR91((ETR 9.1  
1 2))
      ETR13((ETR #13  
2 3))
      RS((RECOVERY SHIP  
3))

      ETR1 -- DATA-VOICE --> ETR3
      ETR1 -- DATA-VOICE --> ETR7
      ETR1 -- DATA-VOICE --> ETR91
      ETR1 -- VOICE --> ETR13
      ETR3 -- VOICE --> ETR13
      ETR7 -- VOICE --> ETR13
      ETR91 -- VOICE --> ETR13
      ETR13 -- VOICE --> RS
  
```

AFMTC FORM 34K
 JUN 61

REPLACES AFMTC FORM 34, JUN 59,
 WHICH IS OBSOLETE.



1. SECURITY CLASSIFICATION
 (U)

REVISION NO.
 17

COMMUNICATIONS RECORDINGS										1. SECURITY CLASSIFICATION		2. PAGE 412	
										UNCLASSIFIED		3. DATE 12 Nov. 1965	
										8. CONTRACTOR		4. REPLACES PAGE(S)	
										MC		DATED	
										15.		PURPOSE AND REMARKS	
5. PROGRAM TITLE		6. PROGRAM REQUIREMENT CODE		7. SYSTEM CODE		8. PROGRAM REQUIREMENT CODE		9. TIME CORRELATION		10. DURATION OF RECORDING		11. YES NO	
TIII SLS/MOL-RSQ		3900											
12. REQUIRED RECORDINGS		13. TIME CORRELATION		14. DURATION OF RECORDING		15. YES NO		16. DURATION OF RECORDING		17. YES NO		18. DURATION OF RECORDING	
All		All requirements are identified in detail in Contract Document SSD-CR-63-215, "Integrated Communications Requirements Plan."											

AFMTC FORM 34F SEP 61 PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.



1. SECURITY CLASSIFICATION
UNCLASSIFIED

5. REVISION NO.

COMMUNICATIONS RECORDINGS										1. SECURITY CLASSIFICATION (U)		2. PAGE 412.1		
5. PROGRAM TITLE TIII SLS/MOL-HSQ										3. DATE 12 NOV. 1965		4. REPLACES PAGE(S)		
6. PROGRAM REQUIREMENT CODE 3900										7. SYSTEM CODE		8. CONTRACTOR MAC		
12. REQUIRED RECORDINGS										13. TIME CORRELATION		14. DURATION OF RECORDING		
										YES NO				
1	HSQ	Radio communication between ETR Sta. #1 and members of the Recovery Force								X		Entire recovery period		15. PURPOSE AND REMARKS Time correlation may be by voice. Instructions to recovery forces are of particular interest. Time correlation may be by voice. Suggest recordings be made of Sta. #12. Time correlation may be by voice. Test analysis and data correlation. Test analysis and data correlation (parameters to be recorded will be defined later).
2	HSQ	Radio communications between various members of the Recovery Force.								X		Entire recovery period		
3	HSQ	MITOC recordings for HSQ Nets 1 thru 20 plus launch vehicle TC and SRO's Nets.								X		T-120 min. to termination		
4	HSQ	Radiation check-out test during pre-launch testing.								X		As required during testing		



HSQ SPACECRAFT		MITOC - GENERAL INFORMATION		L SECURITY CLASSIFICATION (U)		3. PAGE 431																																											
PROGRAM TITLE TIII SLS/MOL-HSQ		6. PROGRAM REQUIREMENT code 3900		8. CONTRACTOR MAC		3. DATE 12 NOV. 1965																																											
10. SKETCHES, DIAGRAMS, ETC.		7. SYSTEM CODE		DATED		4. REPLACES PAGE(S)																																											
1. The number of Nets are as follows: 12 Nets - Required for HSQ. 13 Nets - Reserved for in the event of additional requirements.		TEST CODE: HSQ																																															
2. New assignments, are indicated below:																																																	
<table border="1"> <thead> <tr> <th>ITEM NUMBER</th> <th>NET NUMBER</th> <th>NET TITLE</th> </tr> </thead> <tbody> <tr><td>1</td><td></td><td>S/C Test Conductor</td></tr> <tr><td>2</td><td></td><td>STE</td></tr> <tr><td>3</td><td></td><td>Telemetry</td></tr> <tr><td>4</td><td></td><td>Communications</td></tr> <tr><td>5</td><td></td><td>Power</td></tr> <tr><td>6</td><td></td><td>Sequential</td></tr> <tr><td>7</td><td></td><td>Guidance/Computer</td></tr> <tr><td>8</td><td></td><td>ECS</td></tr> <tr><td>9</td><td></td><td>RCS</td></tr> <tr><td>10</td><td></td><td>IMJ</td></tr> <tr><td>11</td><td></td><td>MST - Clean Room</td></tr> <tr><td>12</td><td></td><td>Telemetry - MILA</td></tr> <tr><td>13 through 26</td><td></td><td>Reserved in event of additional HSQ requirements.</td></tr> </tbody> </table>		ITEM NUMBER	NET NUMBER	NET TITLE	1		S/C Test Conductor	2		STE	3		Telemetry	4		Communications	5		Power	6		Sequential	7		Guidance/Computer	8		ECS	9		RCS	10		IMJ	11		MST - Clean Room	12		Telemetry - MILA	13 through 26		Reserved in event of additional HSQ requirements.	NOTE: Requirements expressed on pages 431 thru 431.3 are based upon the assumption that pre-launch spacecraft testing will be performed on Pad 40. If testing is to be performed in the VIB, requirements must be increased to include end instruments on the work platforms in the VIB White Room.					
ITEM NUMBER	NET NUMBER	NET TITLE																																															
1		S/C Test Conductor																																															
2		STE																																															
3		Telemetry																																															
4		Communications																																															
5		Power																																															
6		Sequential																																															
7		Guidance/Computer																																															
8		ECS																																															
9		RCS																																															
10		IMJ																																															
11		MST - Clean Room																																															
12		Telemetry - MILA																																															
13 through 26		Reserved in event of additional HSQ requirements.																																															
3. End unit types are shown on the following pages. End Instrument Code:																																																	
A. Push button type B. Exterior with nitrogen purge C. Standard																																																	

1. SECURITY CLASSIFICATION
(U)

2. REVISION NO.

AFMTC FORM NOV 61 50 PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

HSQ SPACECRAFT		MOPS AND/OR HITOC										1. SECURITY CLASSIFICATION	
HSQ PROGRAM		TIII SLS/MOL-HSQ		PROGRAM REQUIREMENT		SYSTEM CODE		CONTRACTOR		REMARKS/SPECIAL INSTRUCTIONS/REQUIREMENTS			
NOTE: Requirements contained on pages 431 thru 431.3 are based upon assumption that spacecraft pre-launch testing will not be performed in the VTB. Other-wise requirements must be increased.		12. LOCAL AREA		13. MOPS KEY FUNCTION OR NAME		14. REMARKS/SPECIAL INSTRUCTIONS/REQUIREMENTS		15. SECURITY CLASSIFICATION		16. SECURITY CLASSIFICATION			
1. HSQ		LCC STC Rack 1		S/C Test Conductor		S/C Test Conductor		S/C Test Conductor		S/C Test Conductor			
2. HSQ		LCC STE Rack 2		S/C Test Conductor		S/C Test Conductor		S/C Test Conductor		S/C Test Conductor			
3. HSQ		LCC Pwr & Seq Rack 33		S/C Test Conductor		S/C Test Conductor		S/C Test Conductor		S/C Test Conductor			
4. HSQ		LCC Pwr & Seq Rack 34		S/C Test Conductor		S/C Test Conductor		S/C Test Conductor		S/C Test Conductor			
5. HSQ		LCC Guidance Rack 43C		S/C Test Conductor		S/C Test Conductor		S/C Test Conductor		S/C Test Conductor			
6. HSQ		LCC RCS Rack 23		S/C Test Conductor		S/C Test Conductor		S/C Test Conductor		S/C Test Conductor			
7. HSQ		LCC RCS Rack 23		S/C Test Conductor		S/C Test Conductor		S/C Test Conductor		S/C Test Conductor			
8. HSQ		LCC Remote Control Rack 404		S/C Test Conductor		S/C Test Conductor		S/C Test Conductor		S/C Test Conductor			
9. HSQ		LCC Test Co-ordinator Room #221		S/C Test Conductor		S/C Test Conductor		S/C Test Conductor		S/C Test Conductor			
10. HSQ		6CF VAN #1 IMJ Rack 47		S/C Test Conductor		S/C Test Conductor		S/C Test Conductor		S/C Test Conductor			
11. HSQ		OGE Van #1 IMJ Rack 44		S/C Test Conductor		S/C Test Conductor		S/C Test Conductor		S/C Test Conductor			
12. HSQ		OGE Van #1 IMJ Rack 11		S/C Test Conductor		S/C Test Conductor		S/C Test Conductor		S/C Test Conductor			
13. HSQ		OGE Van #1 RCS Rack 19		S/C Test Conductor		S/C Test Conductor		S/C Test Conductor		S/C Test Conductor			
14. HSQ		OGE Van #1 Power Rack 20		S/C Test Conductor		S/C Test Conductor		S/C Test Conductor		S/C Test Conductor			
15. HSQ		OGE Van #1 SEA Rack 18		S/C Test Conductor		S/C Test Conductor		S/C Test Conductor		S/C Test Conductor			
16. HSQ		OGE Van #1 Power Rack 62		S/C Test Conductor		S/C Test Conductor		S/C Test Conductor		S/C Test Conductor			
17. HSQ		AGE Bldg. Power Rack 85		S/C Test Conductor		S/C Test Conductor		S/C Test Conductor		S/C Test Conductor			
18. HSQ		AGE Bldg. Power Rack 97		S/C Test Conductor		S/C Test Conductor		S/C Test Conductor		S/C Test Conductor			
19. HSQ		OGE Van #2 Attitude Control Rack 43A		S/C Test Conductor		S/C Test Conductor		S/C Test Conductor		S/C Test Conductor			
20. HSQ		OGE Van #2 Attitude Control Rack 43		S/C Test Conductor		S/C Test Conductor		S/C Test Conductor		S/C Test Conductor			
21. HSQ		OGE Van #2 Comm Rack 140		S/C Test Conductor		S/C Test Conductor		S/C Test Conductor		S/C Test Conductor			
22. HSQ		OGE Van #2 Comm Rack 141		S/C Test Conductor		S/C Test Conductor		S/C Test Conductor		S/C Test Conductor			
23. HSQ		OGE Van #2 RCS Rack 32		S/C Test Conductor		S/C Test Conductor		S/C Test Conductor		S/C Test Conductor			



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1. SECURITY CLASSIFICATION UNCLASSIFIED		2. PAGE 431.4	
3. DATE 12 NOV. 1965		4. REPLACES PAGE(S) ---	
5. TEST PROGRAM TIII SLS/MOL-HSQ		6. PROGRAM REQUIREMENT NO. 3900	
7. SYSTEM CODE		8. CONTRACTOR MC	
9. TEST ITEM NO.		10. TEST CODE	
11. LOCAL AREA		12. MOPS NET FUNCTION OR NAME	
13. All requirements are identified in detail in Contract Document SSD-CR-63-215, "Integrated Communications Requirements Plan."		14. REMARKS/SPECIAL INSTRUCTIONS/REQUIREMENTS	
15. AFMTC FORM 34B JUL 61		16. PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.	
17. AFMTC FORM 34B		18. REVISION NO. 17	

TELEPHONE - DIAL															1. SECURITY CLASSIFICATION		2. FILE	
TIII SLS/MOL-HSQ															(U)		3. 14-12 Nov. 1965	
3900															4. SECURITY CLASSIFICATION		5. SECURITY FILE	
6. PROGRAM NAME															7. SYSTEM CODE		8. DATED	
9. PROGRAM REQUIREMENT CODE															10. LOCATION OF TELEPHONES		11. PURPOSE AND REMARKS	
ITEM NO.	TEST CODE	TEST NAME	QTY	NO. OF LINES	EXT.	BY CLASS	LINE	EXT.	LINE	EXT.	LINE	EXT.	LINE	EXT.	LOC.	ROOM	OTHER	
1	HSQ		X	X	3										1	VIB	227	
															2	VIB	227	
															3	VIB	227	
2			X	X	1										4	VIB		S/C Area
3			X	X	2										5	VIB		T/M Van
4			X	X	3										6	VIB		T/M Van
															7	MST		Clean Room
															8	MST		Clean Room
5			X	X	3										9	MST		Clean Room
															10	LC40		Ready Room
															11	LC40		Ready Room
															12	LC40		Ready Room
6			X	X	2										13			OGE Van #1
															14			OGE Van #1
7			X	X	2										15			OGE Van #2
															16			OGE Van #2
8			X	X	3										17			Support Van #1
9			X	X	1										18			Support Van #2
10			X	X	1										19			Support Van #2
11			X	X	1										20	Hgr.L		Work Stand
12	HSQ		X	X												Hgr.L		Office & Indus. Area
13	HSQ		X	X												Hgr.N		Office Area
NOTE: Items 6, 7, 8, 9, 10 to have disconnect capability.															OGE Van #1 and OGE Van #2 will be in VIB for Complex Validation.			

AFMTC FORM 34C PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

JUN 61

TELETYPE										1. SECURITY CLASSIFICATION	
2. PREVIOUS EDITIONS										3. DATE	
TIII SLS/MOL-HSQ										4. DATE	
5. PROGRAM REQUIREMENT CODE										6. DATE	
7. SYSTEM CODE										8. DATE	
9. LOCATION OF OPERATING TERMINALS										10. DATE	
11. STATION, BLDG., ROOM, ETC.										12. DATE	
1	TEST CODE	13. USE	14. SECURE	15. YES	16. NO	17. STATION	18. BLDG.	19. ROOM	20. LOCATION OF OPERATING TERMINALS	21. STATION, BLDG., ROOM, ETC.	22. DATE
1	All	X			X				Room 208, Hangar N		
<p>Required to send and receive messages that are not to be handled through regular mail channels. Provides expeditious means of communications with Contractor's parent plant, and Vendors and Subcontractors on matters of Administration and Engineering, and Test Site Operations.</p>											
<p>Additional requirements will be added at a later date.</p>											

AFMTC FORM 34D JUN 61

PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

1. SECURITY CLASSIFICATION

(U)

2. DATE

12 NOV. 1965

3. DATE

12 NOV. 1965

4. DATE

12 NOV. 1965

[illegible]

PUBLIC ADDRESS				7. SECURITY CLASSIFICATION	
1. TEST PROGRAM TITLE		2. PROGRAM IDENTIFICATION CODE		3. PAGE	
TIII SLS/MOL-HSQ		3900		434	
10. ITEM NO.		11. TEST CODE		4. DATE 12 NOV. 1965	
11. PURPOSE		12. SPEAKER LOCATION		5. CONTRACTOR	
12. REQUIREMENTS		13. SPEAKER LOCATION		6. DATES	
1. HSQ	To provide a means of informing personnel of Operations and Emergency Conditions consistent with routine and special testing.	VIB - Launch Control Center (LOC)	Tie speaker w/volume control into VIB public address system.	MAC	
2.	(Same as above)	VIB - T/M Van	(Same as above)		
3.	(Same as above)	Pad 40 - MST - Level 13 Clean Room	Locate one microphone on East wall of Clean Room. Tie speaker and microphones into Pad 40 Public Address System.		
4.	(Same as above)	Pad 40 - MST - Level 14 Clean Room			
5.	(Same as above)	OCE Van #1	Tie speaker into Pad 40 Public Address System.		
6.	(Same as above)	OCE Van #2	Tie into VIB or Pad 40 Paging System dependant on location of Van.		
7. HSQ		AGE Building - Electrical Equipment Room	(Same as above)		
			Tie speaker into Pad 40 Public Address System.		



AFMTC FORM 34E PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.
NOV 61

7. SECURITY CLASSIFICATION
(U)

8. EXTENSION NO.

PUBLIC ADDRESS		1. SECURITY CLASSIFICATION		2. PAGE 434,1	
		UNCLASSIFIED		3. DATE 12 Nov. 1965	
4. TEST PROGRAM TITLE		5. PROGRAM IDENTIFICATION CODE		6. REPLACES PAGE(S)	
TIII SLS/MOL-HSQ		3900		7. TEST AB CODE	
10. ITEM NO.	11. TEST CODE	12. PURPOSE	13. SPEAKER LOCATION	14. REMARKS	15. DATE
	All	All requirements are identified in detail in Contract Document SSD-CR-63-215, "Integrated Communications Requirements Plan."			



AFATC FORM 34E PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

NOV 61

1. SECURITY CLASSIFICATION

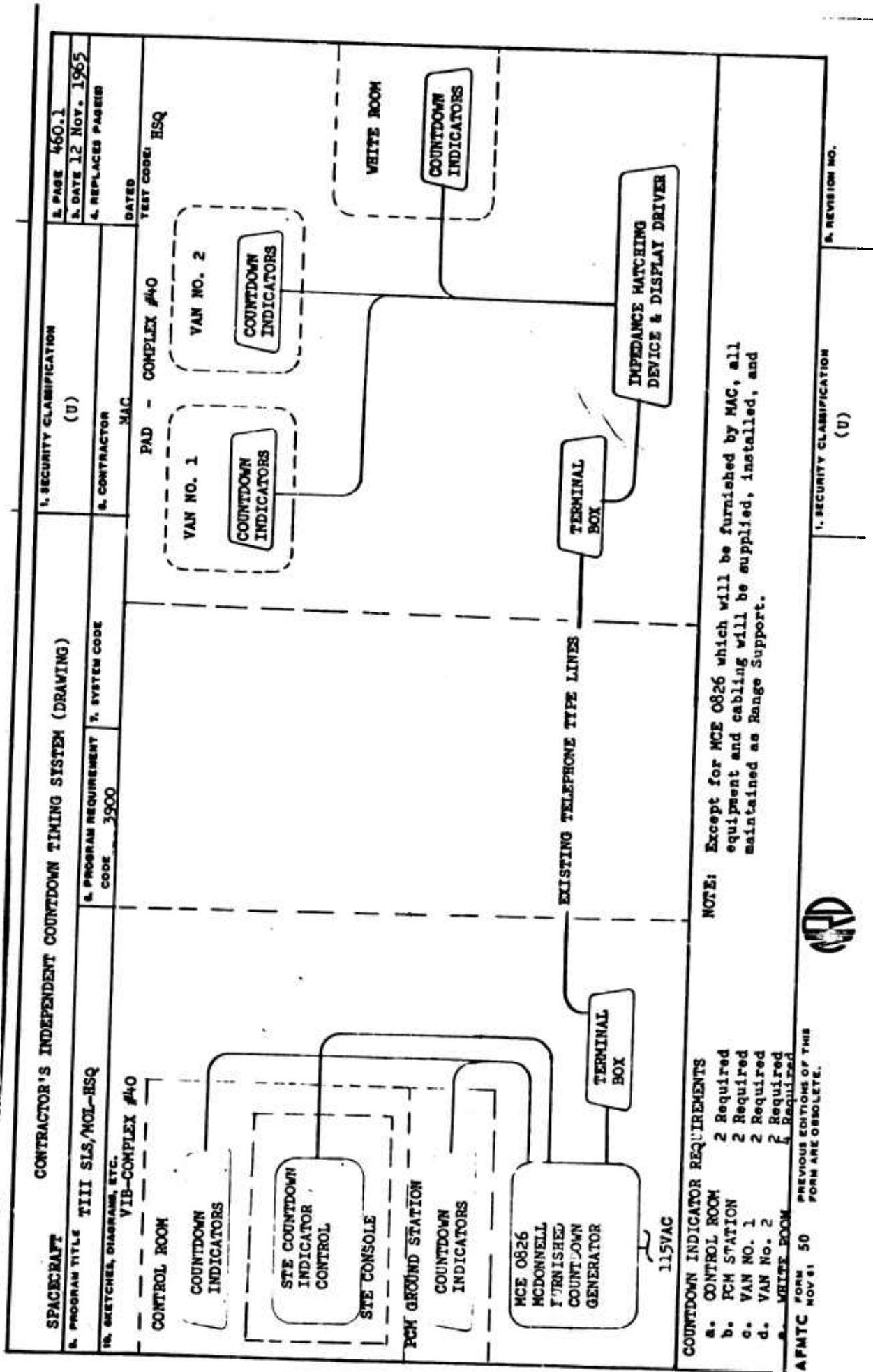
UNCLASSIFIED

8. REVISION NO.

CLOSED CIRCUIT TELEVISION									
1. PROGRAM TITLE		2. SUBJECT TO BE VIEWED		3. PROGRAM REQUIREMENT		4. SYSTEM CODE		5. SECURITY CLASSIFICATION	
TIII SLS/MOL-HSQ				CODE 3900				(U)	
6. PROGRAM REQUIREMENT		7. SYSTEM CODE		8. CONTRACTOR		9. DATED		10. REPLACES PAGE(S)	
CODE 3900				MAC					
11. TEST NO.		12. MONITOR LOCATION(S)		13. INTERVAL (TIME)		14. PURPOSE AND REMARKS		15. DATED	
1	HSQ	Launch Complex 40: Two (2) cameras in White Room with four (4) usable locations, one (1) camera on the umbilical tower mounted for the best view of the space-craft umbilicals and thrusters after Clean Room break-up.	Three (3) 17" wide monitors to be mounted above the Gemini B Control Room racks. With the capability of monitoring any of the three (3) camera positions.	Continuous	This item is required for visual monitoring of spacecraft checkout, test, hazardous servicing of the Reaction Control System, static fire, umbilical drop, and launch. These cameras will be required on a two-shift five-days-per-week operation (minimum), and will be operated by McDonnell. This Closed Circuit Television System will be Range installed, and Range Contractor standby maintenance is required during major pad testing.				
2	HSQ	Video recording of the TV signals appearing on the three(3) Launch Control Center Payload TV monitors is required at ETR TV Central during launch operations and for major pad tests. Playback capability to the Payload Room in the Launch Control Center is required. The video tapes will be made available for engineering evaluation and							
3	HSQ	Launch Complex 40: Two (2) cameras to view over all launch vehicle, payload and complex facilities. (existing cameras maybe utilized)	Two (2) 17" monitors above the spacecraft racks in the VIB Launch Control Room.	Continuous	This Item is required for Visual monitoring of the over-all launch vehicle, Payload and Complex facilities by the personnel in the Spacecraft Launch Control Checkout Room. These cameras and monitors will be required on a two-shift, five-days-per-week operation (minimum). This Closed Circuit Television System is Range installed, and Range Contractor standby maintenance is required during major pad testing.				

VISUAL COUNTDOWN AND STATUS INDICATORS										1. SECURITY CLASSIFICATION		2. PAGE	
Spacecraft										(U)		400	
TITLE: T-111 SLS/MOL-ESQ										3. CONTRACTOR		1. DATE: 12 Nov. 1965	
6. PROGRAM REQUIREMENT CODE: 3900										7. SYSTEM CODE		4. ADVANCE PAGE(S)	
12. INFORMATION TO BE DISPLAYED										13. PERIOD OF OPERATION		14. INDICATORS	
11. TEST CODE										15. LOCATION OF VISUAL INDICATOR		16. SEE NOTE	
10. ITEM NO.										17. STA-TION		18. ROOM NO.	
9. FROM MIN. TO SEC.										8. BLINDING OR SH NO.		7. POSITION OR PANEL TITLE	
1	HSQ	Range Count	Full Count	600	2	B				VIB		TM Van outside VIB	
2		Range Count	Full Count	600	3	B				VIB		Payload Room #1	
3		Range Count	Full Count	600	2	B				Pad A/B		Oge Van #1	1
4		Range Count	Full Count	600	2	B				Pad A/B		Oge Van #2	1
5		Range Count	Full Count	600	4	B				Pad 40		Environmental Control Enclosure	4
6		Range Count	Full Count	600	1	B				Pad 40		Shop Trailer	2
7		Range Count	Full Count	600	1	B				Pad 40		Operations Trailer	2
8		Test of Spacecraft	-300	+30	2	B				VIB		TM Trailer	
9			-300	+30	2					VIB		Payload Room #1	3
10			-300	+30	2					Pad 40 A/B		OGE Van #1	1,3
11			-300	+30	2					Pad 40 A/B		OGE Van #2	1,3
12	HSQ	Test of Spacecraft	-300	+30	4	B				Pad 40		Environmental Control Enclosure	3,4
NOTES: 1. Trailers will be stationed in Cell #1. VIB. for complex checkout and will be moved to Pad 40 with transporter. When the vans are on the pad they will be inside the AGE building. Disconnect capability is required on the vans for both locations. 2. Trailers will be located at Pad 40. Disconnect capability is required. 3. A separate driving source is required to provide a separate countdown system for spacecraft testing. Control of this system is to be provided in Payload Room #1. Indicators to be used in this system must be in addition to those installed in show Range Count. 4. Two indicators are required on each work level and located diagonally opposite each other. 5. The requirements expressed on pages 460 and 460.1 are based upon the assumption that spacecraft/LV mating plus spacecraft checkout will be performed on Pad 40. If spacecraft testing is to be conducted in the VIB, additional indicators will be required.													





AFMTC FORM 50 NOV 61 50 PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

- COUNTDOWN INDICATOR REQUIREMENTS**
- a. CONTROL ROOM 2 Required
 - b. PCM STATION 2 Required
 - c. VAN NO. 1 2 Required
 - d. VAN NO. 2 2 Required
 - e. WHITE ROOM 2 Required

1. SECURITY CLASSIFICATION
(U)

2. REVISION NO.

Spacecraft		DATA HANDLING SYSTEM - Launch & Ballistic Flight		1. SECURITY CLASSIFICATION		2. DATE	
TIII SLS/MOL-HSQ		THROUGH REENTRY		(U)		12 Nov. 1965	
3. PREVIOUS RECORDING DATE		4. PREVIOUS RECORDING DATE		5. CONTRACTOR/CONTRACT NUMBER		6. DATED	
3900		3900		MAC			
LOCATION	INSTRUMENTATION	USE	Test Cell	HSQ			
Cape Kennedy (ETR Station 1) TEL III	Telemetry Equipment PCM/FM, 1 Station	Internal Data: HSQ Spacecraft - record, and decommutate and provide real time strip-cuts of TLM data.					
Cape Kennedy (ETR Station 1)	CZR Cameras Cinetheodolites 35 mm Tracking Cameras C-Band Radar (WFS-16 or TPQ-18) Plotting Boards	Metric Data (2) Metric Data (2) Metric Data (2) Metric Data Show real time comparison between actual and planned trajectory.					
ETR Station 1	Pad Cameras IFLOT	Engineering Sequential Data Engineering Sequential Data					
ETR Station 1 TEL II	Telemetry Equipment: PCM/FM 1 Link	Internal Data: HSQ Spacecraft - record (back-up for TEL III)					
False Cape (ETR Site 33)	Cinetheodolites IGOR	Metric Data (2) Metric Data & Engineering Sequential Data (2)					
Williams Point (ETR Site 34)	IGOR	Metric Data & Engineering Sequential Data (2)					



DATA HANDLING SYSTEM - Launch & Ballistic Flight Through Re-entry				1. SECURITY CLASSIFICATION	
Spacecraft		2. DATE		3. PAGE	
4. PROGRAM TITLE		5. PROGRAM ACQUISITION CODE		6. REFERENCE PAGE(S)	
TIII SLS/MOL-HSQ		3900		12 Nov 1965	
7. SYSTEM CODE		8. CONTRACT/COMBAT NUMBER		9. DATED	
		MAC			
10. Location				Test Code: HSQ	
Instrumentation		Use			
Cocoa Beach (ETR Site 35)	Cinetheodolite ROTI	Metric Data (2) Metric Data & Engineering Sequential Data (2)			
Patrick AFB	Cinetheodolites IGOR C-Band Radar (FPQ-6)	Metric Data (2) Metric Data & Engineering Sequential Data (2) Metric Data			
Grand Bahama Island (ETR Station 3)	C-Band Radar (TPQ-18)	Metric Data			
	Telemetry Equipment: PCM/FM	Internal Data: HSQ Spacecraft - record HSQ Spacecraft - record & transmit via subcable (1)			
Grand Turk Island (ETR Station 7)	C-Band Radar Telemetry Equipment: PCM/FM	Metric Data Internal Data: HSQ Spacecraft - record and transmit via subcable (1)			

DATA HANDLING SYSTEM Launch & Ballistic Flight Through Re-entry				1. SECURITY CLASSIFICATION (U)		2. DATE 12 Nov. 1965	
3. PROGRAM TITLE TII SLS/MOL-HSQ		4. PROGRAM ELEMENT CODE 3900		5. CONTRACTOR/CONTRACT NUMBER MAC		6. DATED	
7. SYSTEM CODE		8. SYSTEM CODE		9. SYSTEM CODE		10. SYSTEM CODE	
Spacecraft	Location	Instrumentation	Use	Test Code: HSQ			
Antigua (ETR Station 9.1)	C-Band Radar (FFQ-6) Telemetry Equipment: PCM/FM 1 Link	Metric Data Internal Data: HSQ Spacecraft - record & transmit via subcable (1)					
Trinidad (ETR Station)	L-Band Radar	Track spacecraft and pass acquisition data to Station 12 radar and TLM receiving equipment.					
Range Instrumentation	C-Band Radar	Metric Data & pass acquisition data to Station 12 radar and telemetry					
Ship (RIS) (12°30'N, 45°00'W)	Telemetry Equipment: PCM/FM 1 Link	Internal Data: HSQ Spacecraft - record					
Ascension (ETR Station 12)	C-Band Radar (TFQ-18) Telemetry Equipment: PCM/FM 1 Link	Metric Data Internal Data: HSQ Spacecraft - record & transmit via subcable (1)					
TIM Aircraft Two JC-130 w/TAA-4 Antenna (S/C Impact Area)	Telemetry Equipment: PCM/FM 1 Link ARA-25 and Sarah Receivers or equivalent	Internal Data: HSQ Spacecraft - record Monitor Recovery Beacon					

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JUN 61



1. SECURITY CLASSIFICATION
(U)

2. REVISION NO.

Spacecraft		DATA HANDLING SYSTEM		1. SECURITY CLASSIFICATION		2. PAGE 470.3	
3. PROGRAM TITLE TIII SLS/MOL-HSQ		4. PROGRAM REQUIREMENT CODE 3900		5. DATE 12 Nov. 1965		6. REPLACES PAGE(S)	
7. SYSTEM CODE		8. CONTRACT/CONTRACT NUMBER MAC		9. DATED		10. SECURITY CLASSIFICATION	
						11. SECURITY CLASSIFICATION	
						12. SECURITY CLASSIFICATION	
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						100. SECURITY CLASSIFICATION	



Spacecraft		DATA HANDLING SYSTEM		1. SECURITY CLASSIFICATION		2. PAGE 478, 4	
3. PROGRAM TITLE		4. PROGRAM IDENTIFICATION CODE		5. DATE		6. REPLACES PAGE(S)	
TIII SLS/NOL-HSQ		3900		(U)		12 NOV. 1965	
7. SYSTEM CODE		8. CONTRACTOR/CONTRACT NUMBER		9. DATED			
		MAC					
DESCRIPTION OF DATA HANDLING SYSTEM							
<p>1. HSQ Preflight Checkout Data Handling System for HSQ Spacecraft.</p> <p>1.1 Two (2) A2A equalized lines from Room B-4 Pad 40 AGE Building to Room 244 VIB for FM/FM data. The input terminal impedance will be 75 OHMS unbalanced, output impedance will be 125 OHMS balanced to ground.</p> <p>1.2 Two (2) A2A equalized lines from Room B-4 Pad 40 AGE Building to Room 244 VIB for 102.4kc split phase PCM input and output impedance will be 125 OHMS balanced to ground.</p> <p>1.3 Three (3) A2A equalized lines from Room 244 VIB to Room B-4 Pad 40 AGE Building for digital control system. Input and output impedance will be 125 OHMS balanced to ground.</p> <p>1.4 One (1) A2A equalized line from Tel II or III to Room 244 VIB, for TM receiver video output of 51.2KC NRZC PCM. Input Impedance to match receiver output. Output impedance 125 OHMS balanced to ground.</p> <p>NOTE 1: The following information pertains to the FM/FM telemetry data.</p> <p>a. Frequencies to be transmitted 200 CPS to 100 KC.</p> <p>b. Frequency response flat \pm 1 db.</p> <p>c. Band width 100 KC</p> <p>d. Maximum level at transmitter end 2.0 Volts peak to peak.</p> <p>e. Minimum level at receiver end 1.0 Volts peak to peak.</p> <p>NOTE 2: The following information pertains to the digital data transmitted.</p> <p>a. 102.4 KC split phase PCM maximum signal level at transmitter end 2.0 Volts peak to peak. Minimum signal level at receiver end 1.0 Volts peak to peak.</p> <p>b. 4.0 KC phase shift, keyed, digital video maximum signal level at transmitter end 2.0 Volts peak to peak. Minimum signal level at receiver end 1.0 Volts peak to peak.</p> <p>NOTE 3: For further information see Pages 430 and 471.</p>							

AFMTC FORM 34H-2
JUN 61

1. SECURITY CLASSIFICATION

(U)

2. REVISION NO.

MRD

SERVICES - GENERAL										1. SECURITY CLASSIFICATION	
<input type="checkbox"/> ADMINISTRATIVE <input type="checkbox"/> FACILITIES OPERATION & MAINTENANCE <input type="checkbox"/> AIR OPERATIONS <input type="checkbox"/> MARINE OPERATIONS										2. PAGE 510 3. DATE 12 NOV. 1965 4. REPLACES PAGE(S)	
5. PROGRAM TITLE TIII SLS/HOL-HSQ										6. CONTRACTOR MAC DATED	
7. PROGRAM REQUIREMENT CODE 3900										8. SYSTEM CODE	
9. PROCUREMENT, STORAGE, & HOUSEKEEPING <input type="checkbox"/> MISCELLANEOUS <input type="checkbox"/> MEDICAL & DENTAL										10. SECURITY CLASSIFICATION (U)	
11. TYPE ITEM/SERVICES										12. PURPOSE AND REMARKS/SPECIAL INSTRUCTIONS	
13. ITEM NO.	14. TEST CODE	15. RUF OR RF	16. FURNISH DATES, AMOUNTS, OR CHECK FOR REQUIRED ITEM/SERVICE				17. FROM: TO: FROM: TO: FROM: TO:				
1	HSQ	RF	Mobile unit daily and as specified during mission periods.								Service at Hangers and launch complexes and Launch Control Center on an effective schedule during operational periods, specific times to be covered in individual QR's.
2	HSQ	RF	Medical Services								Standby ambulance service, stationed near complexes. Regular PTH medical facilities must be available at each operation.
3	HSQ	RF	Fire Protection								Equipment must be available and capable of combatting large propellant spillage fires. Adequate supply of hand type CO ₂ extinguishers required in Hangar "L" and Pad 40.
4	HSQ	RF	Explosives Storage								Storage area for explosives and pyrotechnics to be temperature and humidity controlled and shielded from radiation. Range Contractor to be notified 24 hours in advance as to requirements and delivery area.
5	HSQ	RF	Guards and Security								When vehicles are on pads - one guard at complex, one guard at vehicle. Additional guard at complex day of operation. Guard station to be manned 24 hours per day, 7 days per week until further notice. Appropriate guard orders and access lists to be provided by 6552th ATW.
6	HSQ	RF	Maintenance Service for buildings, office equipment, installed equipment, roadways, diesel power units, circuitry, etc.								Provide preventive maintenance to HSQ test program facilities and equipment. Specifically, preventive maintenance, including periodic inspection and repair or replacement of malfunctioning components.
7	HSQ	RF	Photo Laboratory								Make, process and print film for Project as required.



SERVICES - GENERAL										1. SECURITY CLASSIFICATION	
<input type="checkbox"/> ADMINISTRATIVE <input type="checkbox"/> AIR OPERATIONS PROGRAM TITLE		<input type="checkbox"/> FACILITIES OPERATION & MAINTENANCE <input type="checkbox"/> WAREHOUSE OPERATIONS		<input type="checkbox"/> PROCUREMENT, STORAGE, & HOUSEKEEPING PROGRAM IDENTIFICATION CODE		<input type="checkbox"/> MISCELLANEOUS <input type="checkbox"/> MEDICAL & DENTAL SYSTEM CODE		2. CONTRACTOR DATED		3. DATE 4. REPLACES PAGE(S)	
TIII SLS/MOL-HSQ						3900		MAC		5. PAGE 6. DATE 7. SECURITY CLASSIFICATION	
10. ITEM NO.	11. TEST CODE	12. TYPE ITEM/SERVICES	13. RUF OR RF	14. FURNISH DATES, AMOUNTS, OR CHECK FOR REQUIRED ITEM/SERVICE				15. PURPOSE AND REMARKS/SPECIAL INSTRUCTIONS			
				FROM:	TO:	FROM:	TO:				
8	HSQ	Standards Laboratory	RF								Support HSQ Tests
9	HSQ	Technical Library	RF								Support HSQ Program
10	HSQ	Reproduction Facilities (a) Photographic (b) Printing	RF								Furnish reproductions in services and release prints of MAC supplied material, as required.
11	HSQ	Mobile Searchlight Facilities	RF								Spacecraft night operations.
12	HSQ	Parachute Packing Facilities	RF								Facilities only required for packing, repacking and storing HSQ spacecraft parachute.
13	HSQ	Optical equipment repair and calibration	RF								Support HSQ launch (in optical lab.)
14	HSQ	Proof testing slings	RF								Support HSQ Program (Physical Calibration Lab.)
15	HSQ	Service for Gov't and contractor vehicles	RF								Service to include gasoline, motor and oil and filters, lubrication, tire service, washing and other available services.
16	HSQ	Mosquito Spray									Mosquito control.
17	HSQ	Pump Houses									18 ft head required, usable in deluge tank for Complex 40 launches.
	HSQ	Shop Facilities									Emergency reworks.
18	HSQ	Operation and Maintenance of propellant and pressurization system at Complex 40									Support of test operations.

SERVICES - GENERAL									
ADMINISTRATIVE			FACILITIES OPERATION & MAINTENANCE			MISCELLANEOUS			SECURITY CLASSIFICATION
AIR OPERATIONS			MAINTENANCE OPERATIONS			PROCUREMENT, STORAGE, & HOUSEKEEPING			(U)
PROGRAM TITLE			PROGRAM REQUIREMENT CODE			SYSTEM CODE			DATE
TII SLS/MOL-HSQ			3900			MAC			510.2
ITEM NO.	TEST CODE	TYPE ITEM/SERVICES	RF OR RF	FURNISH DATES, AMOUNTS, OR CHECK FOR REQUIRED ITEM/SERVICE		PURPOSE AND REMARKS/SPECIAL INSTRUCTIONS			
				FROM:	TO:				
20	HSQ	Water at Complex 40 potable and non-potable	RF			Drinking and sanitation			
21	HSQ	Water at Industrial Area Hangar N & L	RF			Drinking and sanitation			
22	HSQ	18" and 36" water systems, 30,000 GPM at 150 PSI	RF			Emergency use for fire control			
23	HSQ	18" and 36" water systems 40,000 GPM at 150 psi	RF			Launch cooling; maximum duration 7 1/2 minutes, maximum daily 225,000 gal.			
23	HSQ	Cleaning Laboratory	RF			Component cleaning services per contractor-furnished specifications.			
25	HSQ	Distribution of T-0 and liftoff signals	RF			Signals supplied by Martin: To T/M van at VIB & to Range Support T/M Stations.			
26	HSQ	Propellant Disposal	RF			Personnel and equipment to safely dispose of oxidizer and fuel collected in launch complex.			
27	HSQ	Scott Air Packs	RF			At Complex 40: 6 regular and 2 with 50-ft lines			
28	HSQ	Maintenance and operation of the Nitrogen Farm which supplies gaseous nitrogen to Complex 40.	RF			The nitrogen farm converts liquid nitrogen to gaseous nitrogen and is capable of delivering the gas at pressures of 2500 to 3500 psig. to the Spacecraft Area CX 40.			
29	HSQ	UPS Operation	RF			Some tests will require UPS operation for as long a period as T-40 minutes thru T-30 minutes. Detailed UPS operation and manning requirements will be specified in appropriate OR's.			



[illegible]

Specacraft		PROPPELLANTS, GASES AND CHEMICALS (FOR MISSILE OR TEST VEHICLE)		1. SECURITY CLASSIFICATION		2. PAGE 330		
PROGRAM TITLE		TIII SLS/MOL-HSQ		(U)		3. DATE 12 Nov. 1965		
PROGRAM NO.		MMS-606		4. CONTRACTING		4. REPLACES PAGE(S)		
NAME/DESIGNATION		MILITARY SPECIFICATION NUMBER		5. SYSTEM CODE		6. DATED		
ITEM NO.	NAME/DESIGNATION	MILITARY SPECIFICATION NUMBER	13. UNITS	14. RUF OR RF	15. QUANTITY REQUIRED/QUARTER			
					66	67	68	69
					1	2	3	4
1	DEIONIZED WATER	MMS-606		RF				
	DISTILLED WATER			RF				
	ETHYL ALCOHOL			RF				
	FLUORINE (LIQUID)							
2	HELIUM							
3	HYDRAZINE Monomethyl (MMH) MIL-P-27404			RF				
	HYDROGEN (LIQUID)			RF				
	HYDROGEN (GAS)							
	HYDROGEN PEROXIDE - 38%							
	HYDROGEN PEROXIDE - 90%							
	INITIAL							
4	NITROGEN-LIN (LIQUID)	MIL-P-27401B		RF				
5	NITROGEN -CAN (GASEOUS)	MIL-P-27401		RF				
6	NITROGEN TETRAOIDE	MIL-P-26539A		RF				
7	OXYGEN-LOR (LIQUID)							
	RP-1							
	UDMH							
8	Argon	MMS-601A		RF				
9	Freon	Dupont MF						
10	Isopropyl Alcohol	Reagent Grade		RF				
11	Chloroethene (NU)			RF				
12	Air (liquid)	MMS-N-205						
13	Oxygen (Gaseous)	MMS-603A		RF				



AFMTC FORM 35B NOV 62
PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

16. TELEPHONE NO.

1. SECURITY CLASSIFICATION

9. REVISION NO.

(U)

MISCELLANEOUS LUBRICANTS, HYDRAULIC FLUIDS, PRESERVATIVES, ETC.										1. SECURITY CLASSIFICATION (U)		2. PAGE 532	
5. PROGRAM TITLE TIII SLS/MOL-HSQ				6. PROGRAM REQUIREMENT NO. 3900				7. SYSTEM CODE		8. CONTRACTOR MAC		3. DATE 12 NOV. 1965	
11. NAME/DESIGNATION				12. MILITARY SPECIFICATION NUMBER		13. UNITS		14. RUF OR RF		15. QUANTITY REQUIRED/QUARTER			
10. ITEM NO.	11. NAME/DESIGNATION	12. MILITARY SPECIFICATION NUMBER	13. UNITS	14. RUF OR RF	15. QUANTITY REQUIRED/QUARTER	16. QUANTITY REQUIRED/QUARTER	17. QUANTITY REQUIRED/QUARTER	18. QUANTITY REQUIRED/QUARTER	19. QUANTITY REQUIRED/QUARTER	20. QUANTITY REQUIRED/QUARTER	21. QUANTITY REQUIRED/QUARTER	22. QUANTITY REQUIRED/QUARTER	23. QUANTITY REQUIRED/QUARTER
1	Grease (Wheel Bearing)	MIL-C-3545A	X	RF	5	1	2	3	4	1	2	3	4
2	Grease Lub(Gen. Purpose)	MIL-L-2111	X	RF	5	1	2	3	4	1	2	3	4
3	Grease Low & High Temp (GLT)	MIL-G-3278	X	RF	5	1	2	3	4	1	2	3	4
4	Versilube F-50 (GE) Silicone		X	RF	1/4	1	2	3	4	1	2	3	4
5	Grease - Silicone (G-300)		X	RF	1/4	1	2	3	4	1	2	3	4
6	MSC 198 Coolant (Monsanto Chemical Co)	MMS-602B	X	RF	20	1	2	3	4	1	2	3	4
7	Lacquer Thinner		X	RF	10	1	2	3	4	1	2	3	4

AFMTC FORM 350 SEP 61 PREVIOUS EDITION OF THIS FORM IS OBSOLETE.

9. SECURITY CLASSIFICATION (U)

9. REVISION NO.

Spacecraft										
CHEMICAL AND PHYSICAL ANALYSIS										
1. SECURITY CLASSIFICATION		2. DATE		3. PAGE		4. REPLACES PAGE(S)		5. DATED		
(U)		12 NOV. 1965		540						
6. CONTRACTOR		7. SYSTEM CODE		8. PROGRAM REQUIREMENT NO.		9. MIL. SPEC. NO.		10. NAME/DESIGNATION		
MAC				3500				TIII SLS/MOL-HSQ		
11. TEST CODE	12. NAME/DESIGNATION	13. MIL. SPEC. NO.	14. DETAILS OF ANALYSIS REQUIRED	15. SAMPLING TIMES						
1 HSQ	Dust Count		Will be provided later.							
2 HSQ	Gaseous Helium	U.S. Bureau of Mines Grade A PS 12302, PS20530 GCE 01-009-8 PB 10-81	<p>1. Percentage purity</p> <p>2. Hydrogen</p> <p>3. Oxygen</p> <p>4. Nitrogen</p> <p>5. Carbon Monoxide</p> <p>6. Carbon Dioxide</p> <p>7. Hydrocarbons, Combined (Methane equivalent)</p> <p>8. Methane</p> <p>9. Ethane</p> <p>10. Ethylene</p> <p>11. Acetylene</p> <p>12. C₂ & higher hydrocarbons (Hexane equivalent)</p> <p>13. Nitrous Oxide</p> <p>14. Halogenated compounds</p> <p>15. Other</p> <p>16. Dew Point</p> <p>Particulate (if specified by authorizing document)</p> <p>10-25 microns</p> <p>50-100 microns</p> <p>Larger than 300 microns</p> <p>25-50</p> <p>100-300</p>	<p>1. When trailers are filled</p>						
			<p>RSS PROP</p> <p>99.95 min</p> <p>10 ppm max</p> <p>15 ppm max</p> <p>50 ppm max</p> <p>(15 ppm)</p> <p>(combined)</p> <p>(maximum)</p> <p>no requirement in addition to Item 7</p> <p>"</p> <p>"</p> <p>"</p> <p>"</p> <p>"</p> <p>"</p> <p>-76 Deg F</p> <p>300/3SCF Max</p> <p>15/3SCF Max</p> <p>None/3SCF</p> <p>60/3SCF</p> <p>3/3SCF</p> <p>40/3SCF max</p> <p>5/3SCF max</p> <p>None/3SCF</p>	<p>OTHER</p> <p>99.95 min</p> <p>no requirement</p> <p>no requirement</p> <p>no requirement</p> <p>5.0 ppm max</p> <p>5.0 ppm max</p> <p>no requirement</p> <p>25 ppm max</p> <p>2.0 ppm max</p> <p>0.02 ppm max</p> <p>0.05 ppm max</p> <p>1.0 ppm max</p> <p>0.1 ppm max</p> <p>0.1 ppm max</p> <p>-0.05 mg/l max</p>						

AFMTC FORM 35E OCT 62



1. SECURITY CLASSIFICATION (U)

REVISION NO. 01

PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

Spacecraft				CHEMICAL AND PHYSICAL ANALYSIS		1. SECURITY CLASSIFICATION		2. PAGE 500, 1	
PROGRAM TITLE		TIII SLS/MOL-HSQ		PROGRAM REQUIREMENT NO. 3900		7. SYSTEM CODE		3. DATE 12 Nov. 1965	
11. TEST CODE		12. NAME/DESIGNATION		13. MIL. SPEC. NO.		14. DETAILS OF ANALYSIS REQUIRED		4. REPLACES PAGE(S)	
10. ITEM NO.		11. TEST CODE		12. NAME/DESIGNATION		13. MIL. SPEC. NO.		5. CONTRACTOR	
10. ITEM NO.		11. TEST CODE		12. NAME/DESIGNATION		13. MIL. SPEC. NO.		6. DATED	
3	HSQ	Nitrogen - GAN (Gaseous)	MIL-P-2740LB PS 12302, 20530 PB 10-81 GCE 01-009-9	1. Percentage purity 2. Total Hydrocarbons By weight as carbon By volume as Methane 3. Moisture Content Particulate Count 10-25 microns 25-50 microns 50-100 microns 100-300 microns 4. N ₂ O ₄ content *** 5. MMH content *** 6. Total filterable solids	99.5% min 25 ppm max 58.3 ppm max .02 mg/l (-63 Deg F Dew Point) 300/3 SCF max 60/3 SCF max 15/3 SCF max 3/3 SCF max 5 ppm max 1 ppm max 1.0 mg/SCF max	1. When Dewar is loaded			
4	HSQ	Argon (Gaseous)	MMS 601 PS 12302, 20530 GCE 01-009-10 PB 10-81	1. Percentage purity 2. Nitrogen 3. Oxygen 4. Hydrogen 5. Dew Point 6. Particulate: * 10-25 microns 50-100 Larger than 300 microns 25-50 microns 100-300	99.997% min 13 ppm max 7 ppm max 5 ppm max -80 Deg F 5 ppm max 300/3 SCF 15/3 SCF None/3 SCF 60/3 SCF Max 3/3 SCF max	2. Complex nitrogen during validation As required per applicable operation requirements document			

AFMTC OCT 62 FORM 35E PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE



1. SECURITY CLASSIFICATION (U)

REVISION NO. 17

Spacecraft									
CHEMICAL AND PHYSICAL ANALYSIS									
1. PROGRAM TITLE		2. NAME/DESIGNATION		3. MIL. SPEC. NO.		4. PROGRAM REQUIREMENT NO.		5. SYSTEM CODE	
TIII SLS/MOL-HSQ						3900			
6. SECURITY CLASSIFICATION		7. CONTRACTOR		8. ANALYSIS REQUIRED		9. SAMPLING TIMES		10. REPLACES PAGE(S)	
(U)		HAC							
11. SECURITY CLASSIFICATION		12. SECURITY CLASSIFICATION		13. SECURITY CLASSIFICATION		14. SECURITY CLASSIFICATION		15. SECURITY CLASSIFICATION	
(U)		(U)		(U)		(U)		(U)	
5	HSQ	Nitrogen Tetroxide (N ₂ O ₄)	MIL-P-26539A (N ₂ O ₄) PS 20530 PB 10-81	1. Percentage purity 2. Water equivalent 3. Chloride as Nitrosyl Chloride 4. Non-volatile Ash Particulate: * 10-25 microns 25-50 microns 50-100 microns Larger than 300 microns 100-300 microns Determine iron content (PPM) 1. Percentage purity 2. Water plus soluble impurities 3. Density at 77 Deg F (25 Deg F) in grams/milliliter 4. Transmittancy (percent) 5. Particulate weight Particulate: * 10-25 microns 25-50 microns 50-100 microns Larger than 300 microns 100-300 microns *If specified by the accompanying GCE	99.5% min. 0.1% max 0.08% max 0.01% max 100/100 ml max 20/100 ml max 5/100 ml max none/100 ml max 1/100 ml max 98.0 2.0% max 0.872 ± 0.004 90 min 1.0 mg/liter max 100/100 ml max 20/100 ml max 5/100 ml max None/100 ml max 1/100 ml max	1. Upon receipt 2. Every 30 days 3. Before use (2 days) 4. After loading			
6	HSQ	Monomethyl Hydrazine (MMH)	MIL-P-27404, PS 20530 PB 10-81 GCE 01-009-12						



AFMTC FORM 35E PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

REVISION NO.
MT

Spacecraft				CHEMICAL AND PHYSICAL ANALYSIS		1. SECURITY CLASSIFICATION		2. PAGE 549. 3	
3. PROGRAM TITLE				6. PROGRAM REQUIREMENT		7. SYSTEM CODE		3. DATE 12 Nov. 1965	
TYII SLS/HOL-HSQ				NO. 3900				4. REPLACES PAGE(S)	
11. TEST CODE				12. NAME/DESIGNATION		13. MIL. SPEC. NO.		5. CONTRACTOR	
14. ITEM NO.				15. DETAILS OF ANALYSIS REQUIRED		16. SAMPLING TIMES		6. DATED	
7	ESQ	Demineralized Water	MMS 606, PS12302, 20530, PB 10-81	1. Filterable solids Particulate 10-25 microns 25-50 microns 50-100 microns 100-300 microns 300 up Total solids Specific Conductance	1 mg/100 ml max 100/100 ml max 20/100 ml max 5/100 ml max 1/100 ml max none Info only Info only	1 as required per applicable operation requirements document.			
8	ESQ	Freon MF (Trichloromonofluoromethane)	Dupont Specifications Filtered through 2 Micron Filter	Appearance - clear, colorless liquid Boiling PT - 74.8 Deg F at 1 ATM Boiling Range - (5 to 85% distilled) - 0.5 Deg F Soluble Residue (ppm by wt., max) - 2 Chloride Ion (ppm wt., max) - Nil Moisture content (ppm by wt., max) -10		One time requirement - two week notice			



AFMTC FORM 35E OCT 62 PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

1. SECURITY CLASSIFICATION (U)

REVISION NO. MT

Spacecraft										1. SECURITY CLASSIFICATION		2. PAGE 500	
TEST INSTRUMENT MAINTENANCE AND CALIBRATION										(U)		3. DATE 12 Nov. 1965	
[X] ELECTRICAL & ELECTRONIC [] DIMENSIONAL & PHYSICAL [] OPTICAL INSTRUMENTS												4. REPLACES PAGE(S)	
5. PROGRAM TITLE T III SLS/MOL-HBQ										6. CONTRACTOR		7. SYSTEM CODE	
6. PROGRAM REQUIREMENT NO. 3900										MAC		8. DATED	
11. RANGE USER'S PRECISION ELECTRONIC, MECHANICAL OR OPTICAL INSTRUMENTS										12. CALIBRATION		13. REPAIRS	
10. ITEM NO.										14. QUANTITY		15. P67 P68	
NAME/DESIGNATION										NAME OF MANUFACTURER		MODEL NUMBER	
NAME OR SCALE & UNITS										RANGE OR SCALE & UNITS		CYCLE	
IN PLACE YES NO										MAJOR MINOR		1 2 3 4	
1	Analyzer, Distortion	Hewlett Packard	330DR	20 to 20 Kc	Mfg. Spec.	3	X						
2	Analyzer, Dynamic	Industrial Control	100A	10.15 db at DC	"	3	X						
3	Attenuator	Weinschel Eng.	10-10	10.2 db at 0.4KMC	"	6	X						
4	Attenuator	Weinschel Eng.	50-20	10.2 db at 0.75KMC	"	6	X						
5	Bridge, Impedance	General Radio	650A	10.0 db at 1.0KMC	"	6	X						
6	Bridge, Impedance	General Radio	1650A	20.0 db at DC	"	6	X						
7	Bridge, RF	General Radio	1606A	20.0 db at 0.4KMC	"	6	X						
8	Bridge, Wheatstone	Rubicon Inst.	105Z	20.1 db at 1.0KMC	"	6	X						
9	Calibrator, AC-DC	Ballantine	420	0 to 1 Meg	"	6	X						
10	Precision	Eppley Lab	100	0 to 100 MF	"	6	X						
11	Cell, Standard	Weston	4	0 to 100 h	"	6	X						
12	Checker, L. C.	Aerovox	97	0 to 1000 h	"	6	X						
13	Coder, Modulation	Babcock	BCC6	0 to 1000 ohms	"	6	X						
14	Counter, Electronic	Backman-Berkley	7060	400 Kc to 60 Mc	"	6	X						
15	Counter, Electronic	Backman-Berkley	7360JR	0 to 10 Meg	"	6	X						
16	Counter, Electronic	Hewlett Packard	521CR	0 to 10 VDC	"	3	X						
17	Counter, Electronic	Hewlett Packard	521CR	0.00015 to 3.5MFD	0.01% Mfg. Spec.	2	X						
18	Counter, Electronic	Hewlett Packard	522B	45 Kc to 44 Mc	"	2	X						
19	Counter, Electronic	Hewlett Packard	523B	0 to 1.0 Mc	"	3	X						
20	Counter, Electronic	Hewlett Packard	532CR	0 to 1.0 Mc	"	3	X						
21	Counter, Electronic	Hewlett Packard	524C	1 cps to 120 Kc	"	3	X						

AFMTC FORM 35G SEP 61



1. SECURITY CLASSIFICATION (U)

2. REVISION NO.

Spacecraft										1. SECURITY CLASSIFICATION		2. PAGE 500 .1	
TEST INSTRUMENT MAINTENANCE AND CALIBRATION										(U)		3. DATE 12 NOV. 1965	
X ELECTRICAL & ELECTRONIC												4. REPLACES PAGE(S)	
T III SIS/MOL-HSQ										B. CONTRACTOR		DATED	
5. PROGRAM TITLE										6. PROGRAM REQUIREMENT NO. 3900		7. SYSTEM CODE	
11. NAME OF USER'S PRECISION ELECTRONIC, MECHANICAL OR OPTICAL INSTRUMENT										12. CALIBRATION		13. REPAIRS	
10. NAME OF MANUFACTURER										14. RANGE IN SCALE & UNITS		15. IN PLACE	
16. NAME OF MANUFACTURER										17. ACCURACY		18. CYCLE	
19. NAME OF MANUFACTURER										20. MFG. SPEC.		21. MAJOR MINOR	
22. NAME OF MANUFACTURER										23. DC to 500 KC		24. YES NO	
25. NAME OF MANUFACTURER										26. 1 cps to 100 KC		27. 1 2 3 4	
28. NAME OF MANUFACTURER										29. 5 cps to 100 KC		28. 1 2 3 4	
29. NAME OF MANUFACTURER										30. 0 to 220 KC		29. 1 2 3 4	
30. NAME OF MANUFACTURER										31. 0 to 0.01 MFD		30. 1 2 3 4	
31. NAME OF MANUFACTURER										32. 0 to 10 MFD		31. 1 2 3 4	
32. NAME OF MANUFACTURER										33. 0.001 to 0.1 MFD		32. 1 2 3 4	
33. NAME OF MANUFACTURER										34. 0 to 0.1 MFD		33. 1 2 3 4	
34. NAME OF MANUFACTURER										35. 0 to 1.0 IN		34. 1 2 3 4	
35. NAME OF MANUFACTURER										36. 0.001 Steps		35. 1 2 3 4	
36. NAME OF MANUFACTURER										37. 20 to 200 Kc		36. 1 2 3 4	
37. NAME OF MANUFACTURER										38. 0.02 to 2 Kc		37. 1 2 3 4	
38. NAME OF MANUFACTURER										39. 20 to 200 Kc		38. 1 2 3 4	
39. NAME OF MANUFACTURER										40. 1 cps to 10 Kc PRF		39. 1 2 3 4	
40. NAME OF MANUFACTURER										41. 0.25 to 10 us PW		40. 1 2 3 4	
41. NAME OF MANUFACTURER										42. 0.008 to 1.2 Kc		41. 1 2 3 4	
42. NAME OF MANUFACTURER										43. 10 cps to 10Kc PRF		42. 1 2 3 4	
43. NAME OF MANUFACTURER										44. 0.2 to 2 us PW		43. 1 2 3 4	
44. NAME OF MANUFACTURER										45. 20Kc, 500Kc, 65Mc		44. 1 2 3 4	
45. NAME OF MANUFACTURER										46. 17' to 250 Mc		45. 1 2 3 4	
46. NAME OF MANUFACTURER										47. 10 to 470 Mc		46. 1 2 3 4	
47. NAME OF MANUFACTURER										48. 50 Kc to 65 Mc		47. 1 2 3 4	
48. NAME OF MANUFACTURER										49. 3800Mc to 7600Mc		48. 1 2 3 4	
49. NAME OF MANUFACTURER										50. 1800Mc to 4000Mc		49. 1 2 3 4	
50. NAME OF MANUFACTURER										51. 10 Mc to 420 Mc		50. 1 2 3 4	

AFMTC FORM SEP 61 35G

AFMTC

Spacecraft										1. SECURITY CLASSIFICATION		2. PAGE 540 .2	
TEST INSTRUMENT MAINTENANCE AND CALIBRATION										(U)		3. DATE 12 NOV 1965	
X. ELECTRICAL & ELECTRONIC												4. REPLACES PAGE(S)	
PROGRAM TITLE										8. CONTRACTOR		DATED	
T III SIS/MOL-ESQ													
5. PROGRAM REQUIREMENT NO. 3900										MAC		QUANTITY	
6. PROGRAM REQUIREMENT NO. 3900										13. REPAIRS		14. PY 66	
7. SYSTEM CODE										IN PLACE		CYCLE	
8. PROGRAM REQUIREMENT NO. 3900										YES		NO	
9. PROGRAM REQUIREMENT NO. 3900										ACCURACY		CYCLE	
10. RANGE USER'S PRECISION ELECTRONIC, MECHANICAL OR OPTICAL INSTRUMENTS										RANGE OR SCALE & UNITS		CYCLE	
11. RANGE USER'S PRECISION ELECTRONIC, MECHANICAL OR OPTICAL INSTRUMENTS										MODEL NUMBER		CYCLE	
12. RANGE USER'S PRECISION ELECTRONIC, MECHANICAL OR OPTICAL INSTRUMENTS										NAME OF MANUFACTURER		CYCLE	
13. RANGE USER'S PRECISION ELECTRONIC, MECHANICAL OR OPTICAL INSTRUMENTS										NAME OF MANUFACTURER		CYCLE	
14. RANGE USER'S PRECISION ELECTRONIC, MECHANICAL OR OPTICAL INSTRUMENTS										NAME OF MANUFACTURER		CYCLE	
51	Generator, UHF	Hewlett Packard	608DR										
52	Generator, Sweep TV-FM	RCA	WR69A										
53	Generator, Square Wave	Tektronix	105										
54	Generator, Square Wave	Tektronix	107										
55	Generator, Sine Wave	Tektronix	190B										
56	Generator, Time Marker	Tektronix	180A										
57	Indicator, Standing Wave	Hewlett Packard	415BR										
58	Meter, Admittance UHF	General Radio	1602B										
59	Meter, Amp AC	Westinghouse	PY-4										
60	Meter, Amp DC	Weston	931										
61	Meter, Differential	John Fluke	803										
62	Meter, Digital Ratio	Hycon	625										
63	Meter, Digital Volt	Beckman-Berkley	4011										
64	Meter, Digital Volt	Beckman-Berkley	4011R										
65	Meter, Digital Volt	Beckman-Berkley	5350										
66	Meter, Digital Volt	Beckman-Berkley	5350K										
67	Meter, Digital Volt	Hewlett Packard	405AR										
68	Meter, Digital Volt	Hewlett Packard	405BR										
69	Meter, Digital Volt	Hewlett Packard	405CR										
70	Meter, Digital Volt	Kintel	456										
71	Meter, Digital Volt	Kintel	502										
72	Converter, AC	Kintel	452										
73	Readout, Digital	Kintel	473A										
74	Meter, Distortion & Noise	General Radio	1932A										

AFMTC FORM SEP 61 35G

*Items will be required in FY '68 only if the program is expanded to include additional launches.

1. SECURITY CLASSIFICATION

(U)

9. REVISION NO.

Spacecraft										1. SECURITY CLASSIFICATION		2. PAGE 600, 3	
TEST INSTRUMENT MAINTENANCE AND CALIBRATION										(U)		3. DATE 12 NOV 1965	
1. ELECTRICAL & ELECTRONIC										2. OPTICAL INSTRUMENTS		4. REPLACES PAGE(S)	
PROGRAM TITLE										8. CONTRACTOR		DATED	
T III SIS/NOI-HSQ										MAC			
5. PROGRAM REQUIREMENT										7. SYSTEM CODE			
6. PROGRAM REQUIREMENT NO. 3900													
11. RANGE USER'S PRECISION ELECTRONIC, MECHANICAL OR OPTICAL INSTRUMENTS										12. CALIBRATION		13. REPAIRS	
10. ITEM NO.										14. QUANTITY		15. REPAIRS	
NAME OF MANUFACTURER										IN PLACE		16. QUANTITY	
NAME/DESIGNATION										CYCLE		17. QUANTITY	
RANGE OR SCALE & UNITS										ACCURACY		18. QUANTITY	
MODEL NUMBER										CYCLE		19. QUANTITY	
NAME OF MANUFACTURER										CYCLE		20. QUANTITY	
75	Meter, Electronic Volt	Ballantine	300	1 Mv to 100V RMS 10 Cps to 150 Kc	Mfg. Spec.	3	X			1	2	3	4
76	Meter, Electronic Volt	Ballantine	300D	1 Mv to 1000V RMS	"	3	X						
77	Meter, Electronic Volt	Ballantine	302C	100 uv to 1000V RMS	"	3	X						
78	Meter, Electronic Volt	Brueel & Kjoer	2409	0 to 1000V AV., RMS, & PP	"	3	X						
79	Meter, Electronic Multi	Daven	ME6/DU	500 uv to 500V RMS	"	3	X						
80	Meter, Electronic Multi	Harrison Lab	ME6/DU	500 uv to 500V RMS	"	3	X						
81	Meter Frequency	General Radio	720A	10 to 3000 Mc	"	3	X						
82	Meter, Frequency	JB1 Instruments	33FP9M	100 to 130 VAC 380 to 420 cps	"	3	X						
83	Meter, Frequency	Narda Corp	802B	2350 to 10.5 Mc	"	3	X						
84	Meter, Frequency	Polytechnic Research	583D	2.7 to 3 K Mc	"	3	X						
85	Meter, Frequency	Sperry Corp	28C	4010 to 6000 Mc	"	3	X						
86	Meter, Hook-On Volt AMP AC	General Electric	AK4	0 to 750V	"	3	X						
87	Meter, Megohm	Freed	1020B	0 to 800A 1 to 2,000,000 Meg	3%	3	X						
88	Meter, Calorimetric Pwr.	Hewlett Packard	434AR	500 VDC	Mfg. Spec.	3	X						
89	Meter, Microwave Power	Hewlett Packard	430C	0 to 10 MW	"	3	X						
90	Meter, Microwave Power	Hewlett Packard	430CR	0 to 10 Mw	"	3	X						
91	Meter, Micro Volt-Amp DC	Kintel	203	100uWA to 100 MA 100 u v to 1000 V	"	3	X						
92	Meter, Milliamp DC	Weston	931	0 to 1.0 MA	0.5%	3	X						
93	Meter, Milliamp DC	Weston	931	0 to 15.0 MA	0.5%	3	X						
94	Meter, Milliohm	Shaucross	670A	0 to 0.5 Ohm	Mfg. Spec.	3	X						

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SEP 91

Spacecraft										1. SECURITY CLASSIFICATION		2. PAGE 540 4	
TEST INSTRUMENT MAINTENANCE AND CALIBRATION										(U)		3. DATE 12 Nov 1965	
1. X ELECTRICAL & ELECTRONIC 2. DIMENSIONAL & PHYSICAL 3. OPTICAL INSTRUMENTS T III SIS/MOL-HSQ										B. CONTRACTOR MAC		4. REPLACES PAGE(S)	
5. PROGRAM TITLE		6. PROGRAM REQUIREMENT		7. SYSTEM CODE		8. CALIBRATION		9. REPAIRS		10. QUANTITY			
ITEM NO	NAME/DESIGNATION	NAME OF MANUFACTURER	MODEL NUMBER	RANGE OR SCALE & UNITS	ACCURACY	CYCLE	IN PLACE YES NO	MAJOR MINOR	PY 65	PY 67	PY 68		
95	Meter, VOM	Simpson	270	0 to 500V AC&DC 0 to 10 A DC 0 to 20 Meg	Mfg Spec	3	X	X	1	2	3		
96	Meter, VOM	Triplet	630	0 to 6000 V AC&DC 0 to 12 A DC 0 to 100 Meg	"	3	X	X	1	2	3		
97	Meter, VOM	Triplet	630A	0 to 6000 V AC&DC 0 to 12 A DC 0 to 100 Meg	"	3	X	X	1	2	3		
98	Meter, VOM	Triplet	630APL	0 to 6000 V AC&DC 0 to 12 A DC 0 to 100 Meg	"	3	X	X	1	2	3		
99	Meter, VOM	Triplet	630VA	0 to 6000 V AC&DC 0 to 12 A DC 0 to 100 Meg	"	3	X	X	1	2	3		
100	Meter, VTVM	Hewlett Packard	400C	0 to 300 V RMS 10 cps to 2 Mc	"	3	X	X	1	2	3		
101	Meter, VTVM	Hewlett Packard	400D	0 to 300 V RMS 10 cps to 4 Mc	"	3	X	X	1	2	3		
102	Meter, VTVM	Hewlett Packard	400H	0 to 300 V RMS 10 cps to 4 Mc	"	3	X	X	1	2	3		
103	Meter, VTVM	Hewlett Packard	400 HR	0 to 300 V RMS 10 cps to 4 Mc	"	3	X	X	1	2	3		
104	Meter, VTVM	Hewlett Packard	410A	0 to 1000 VDC 0 to 500 Meg	"	3	X	X	1	2	3		

Spacecraft										1. SECURITY CLASSIFICATION		2. PAGE 340, 5	
TEST INSTRUMENT MAINTENANCE AND CALIBRATION										(U)		3. DATE 12 Nov 1965	
X. ELECTRICAL & ELECTRONIC												4. REPLACES PAGE(S)	
5. PROGRAM TITLE T IIT-8LS/MOL-HSQ										8. CONTRACTOR		DATED	
6. PROGRAM REQUIREMENT										MAC			
7. DIMENSIONAL & PHYSICAL													
8. PROGRAM NO. 3900													
9. RANGE USER'S PRECISION ELECTRONIC, MECHANICAL OR OPTICAL INSTRUMENTS										12. CALIBRATION		14. QUANTITY	
10. NAME OF MANUFACTURER										13. REPAIRS		FY 66	
11. RANGE USER'S PRECISION ELECTRONIC, MECHANICAL OR OPTICAL INSTRUMENTS										CYCLE		FY 67	
12. RANGE OF SCALE & UNITS										IN PLACE		FY 68	
13. RANGE OF SCALE & UNITS										YES		FY 69	
14. RANGE OF SCALE & UNITS										NO		FY 70	
105 Meter, VTVM	Hewlett Packard	410B	0 to 300 VAC 20 cps to 700Mc 0 to 1000 VDC	Mfg Spec	3	X							
106 Meter, VTVM	Hewlett Packard	412A	0 to 500 Meg 0 to 1000 VDC	"	3	X							
107 Meter, VTVM	RCA	WV98A	0 to 1 ADC 0 to 5000 Meg	"	3	X							
108 Meter, VTVM	Simpson	303	0 to 1500 V AC&DC 0 to 4200 V-AC-PP 30 cps to 3 Mc	"	3	X							
109 Meter, Watt	Bird Electric	43	0 to 1000 Meg 0 to 100 Kc	"	6	X							
110 Meter, Watt	Bird Electric	61	0 to 25 W 0 to 50 W	"	6	X							
111 Meter, Watt	Bird Electric	611	0 to 100 W 0 to 15 W	"	6	X							
112 Meter, Watt	Sierra Electronic	185A100FN	0 to 60 W 0 to 30 W	"	6	X							
113 Oscillator, Audio	Hewlett-Packard	200ABR	0 to 100 W 20 to 40 Kc	"	3	X							
114 Oscillator, Audio	Hewlett-Packard	200CD	5 to 600 Kc	"	3	X							
115 Oscillator, Audio	Hewlett-Packard	202B	0.5 cps to 50 Kc	"	3	X							
116 Oscillator, Audio	Hewlett-Packard	202CR	1 cps to 100 Kc	"	3	X							

AFMTC FORM 35G
SEP 61

AFMTC

1. SECURITY CLASSIFICATION

(U)

2. REVISION NO.

Spacecraft										1. SECURITY CLASSIFICATION		2. PAGE 140, 6	
X. ELECTRICAL & ELECTRONIC										(U)		3. DATE 12 NOV 1963	
Y. DIMENSIONAL & PHYSICAL												4. REPLACES PAGE(S)	
5. PROGRAM TITLE										B. CONTRACTOR		DATED	
T III SLS/MOL-HSQ										MAC			
6. PROGRAM REQUIREMENT NO. 3900										7. SYSTEM CODE			
11. RANGE USFPA'S PRECISION ELECTRONIC, MECHANICAL OR OPTICAL INSTRUMENTS 12.										CALIBRATION		13. REPAIRS	
ITEM NO	NAME/DESIGNATION	MANUFACTURER	MODEL NUMBER	RANGE OR SCALE & UNITS	ACCURACY	CYCLE	IN PLAC YES	NO	MAJOR	MINOR	QUANTITY		
117	Oscillator, Audio	Hewlett-Packard	202CR	1 cps to 100 Kc	+ 2% Wfg.	3	X				1	2	67
118	Oscillator, Electronic Sweep	Hewlett-Packard	683C	2.1 Mc to 2.1 GC	Spec	3							
119	Oscillator, Electronic Sweep	Hewlett-Packard	684C	4.1 Mc to 4.1 GC	"								
120	Oscillator, Telemetry	Hewlett-Packard	200T	250 cps to 100 Kc	"	3							
121	Oscillator, Telemetry	Hewlett-Packard	200T	250 cps to 100 Kc	"	2	X						
122	Oscillator, Telemetry	Hewlett-Packard	200TR	250 cps to 100 Kc	"	3							
123	Oscillator, Transfer	Beckman Berkley	7580R	60Cps to 15K	"	2							
124	Oscillator, Transfer	Hewlett-Packard	540B	100 Mc to 220 Mc	"	3							
125	Oscillator, Unit	General Radio	1211B	0.5 to 50 Mc	"	4							
126	Oscilloscope	DuMont	304H	DC to 100 Kc	"	3							
127	Oscilloscope	DuMont	401A	DC to 100 Kc	"	3							
128	Oscilloscope	Hewlett-Packard	120A	DC to 200 Kc	"	3							
129	Oscilloscope	Hewlett-Packard	120AR	DC to 200 Kc	"	3							
130	Oscilloscope	Hewlett-Packard	122AR	DC to 200 Kc	"	3							
131	Oscilloscope	Hewlett-Packard	130BR	DC to 300 Kc	"	3							
132	Oscilloscope	Tektronix	535	DC to 12 Mc	"	3							
133	Oscilloscope	Tektronix	545A	DC to 30 Mc	"	3							
134	Oscilloscope	Tektronix	555A	DC to 30 Mc	"	3							
135	Oscilloscope	Tektronix	RM35A	DC to 15 Mc	"	3							
136	Oscilloscope	Tektronix	RM45	DC to 30 Mc	"	3							
137	Oscilloscope	Tektronix	RM45A	DC to 30 Mc	"	3							
138	Preamplifier, Oscilloscope	Tektronix	53/54	DC to 20 Mc	"	3							
139	Preamplifier, Oscilloscope	Tektronix	53/54C	DC to 20 Mc	"	2	X						
140	Preamplifier, Oscilloscope	Tektronix	53/54N	DC to 20 Mc	"	2	X						
141	Preamplifier, Oscilloscope	Tektronix	A	DC to 20 Mc	"	3							
142	Preamplifier, Oscilloscope	Tektronix	B	DC to 20 Mc	"	3							
143	Preamplifier, Oscilloscope	Tektronix	CA	2 cps to 12 Mc AC	"	3							
144	Preamplifier, Oscilloscope	Tektronix	D	DC to 24 Mc	"	3							
				at 1 mv/cm									
				DC to 2 Mc									
				AC 50 MV/cm									

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1. SECURITY CLASSIFICATION (U)

2. REVISION NO.



Spacecraft										1. SECURITY CLASSIFICATION		2. PAGE 540 8	
TEST INSTRUMENT MAINTENANCE AND CALIBRATION										(U)		3. DATE 12 NOV 1965	
ELECTRICAL & ELECTRONIC										(U)		4. REPLACES PAGE(S)	
T III SLS/MOL-HSQ										8. CONTRACTOR		MAC	
5. PROGRAM TITLE										6. PROGRAM REQUIREMENT NO. 3900		7. SYSTEM CODE	
11. RANGE USRP'S PRECISION ELECTRONIC, MECHANICAL OR OPTICAL INSTRUMENTS										12. CALIBRATION		13. REPAIRS	
10. ITEM NO.	NAME/DESIGNATION	NAME OF MANUFACTURER	MODEL NUMBER	RANGE OR SCALE & UNITS	ACCURACY	CYCLE	IN PLACE YES	NO	MAJOR	MINOR	14. QUANTITY	15. QUANTITY	16. QUANTITY
170	Supply, Power	Hewlett-Packard	712B	0 to 500 VDC at 200MA, 0 to 150VDC at 5MA-300VDC at 50MA, 6.3VAC at 10A	Mfg Spec	6	X		X		2	3	4
171	Supply Power	Hewlett-Packard	721B	0 to 150 MA	"	6	X		X		1	1	1
172	Supply, Power	Hewlett-Packard	723A	0 to 40 VDC	"	6	X		X		1	1	1
173	Supply, Power	Kepco	SC32-15A	0 to 500 MA	"	6	X		X		1	1	1
174	Supply, Power	Krohn-Hite	UHR245	0 to 32 VDC	"	6	X		X		1	1	1
				0 to 15A	"	6	X		X		1	1	1
				0 to 500 VDC	"	6	X		X		1	1	1
				0 to 500 Ma	"	6	X		X		1	1	1
				6.3 VAC at 10A	"	6	X		X		1	1	1
175	Supply, Power	Lambda	LA50-03AM	0 to 34 VDC	"	6	X		X		1	1	1
176	Supply, Power	Lambda	C28-1M	0 to 5A	"	6	X		X		1	1	1
177	Supply, Power	Lambda	C88-1M	125V to 325 VDC	"	6	X		X		1	1	1
				0 to 200 Ma	"	6	X		X		1	1	1
				125V to 325 VDC	"	6	X		X		1	1	1
				0 to 800 Ma	"	6	X		X		1	1	1
178	Supply, Power	NJE Corp	ETC-32-20	0 to 32VDC	"	6	X		X		3	3	3
179	Supply, Power	NJE Corp	OR18-6	0 to 20A	"	6	X		X		1	1	1
				0 to 18VDC	"	6	X		X		1	1	1
				0 to 6A	"	6	X		X		1	1	1
180	Supply, Power	NJE Corp	SS32-3	0 to 32VDC; 0 to 3A	"	3	X		X		1	1	1
181	Supply, Power	NJE Corp	ETC-32-10	0 to 36VDC	"	6	X		X		1	1	1
				0 to 10A	"	6	X		X		1	1	1

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1. SECURITY CLASSIFICATION (U)

9. REVISION NO.

Spacecraft										1. SECURITY CLASSIFICATION		2. PAGE 540 10		
X. ELECTRICAL & ELECTRONIC										(U)		3. DATE 12 Nov 1965		
T III SLS/MOL-HSQ										9. CONTRACTOR		4. REPLACES PAGE(S)		
6. PROGRAM REQUIREMENT NO. 3900										7. SYSTEM CODE		DATED		
11. RANGE USER'S PRECISION ELECTRONIC, MECHANICAL OR OPTICAL INSTRUMENTS 12.										13. REPAIRS		14. QUANTITY		
ITEM NO.	NAME/DESIGNATION	NAME OF MANUFACTURER	MODEL NUMBER	RANGE OR SCALE & UNITS	ACCURACY	CYCLE	IN PLACE YES NO	MAJOR MINOR	PY	66	3	4	PY 67	PY 68
196	Power Supply	NJE	QR-10-10B	Amplitude: 0 to 10VDC; 0 to 10A "	Mfg.	6	X	X						
197	Power Supply	NJE	RB-50-1.5	2V for Range 0 to 50VDC; 0 to 1.5A "	Spec.	6	X	X						
198	Power Supply	NJE	SY-36-30BM	Pulse & Zero 0 to 36VDC; 0 to 30A "										
199	Power Supply	NJE	TC-14-200	Angular Error 14 VDC, 0 to 200A "		6	X	X						
200	Power Supply	NJE	CS-36-CR5	36 VDC 36 VDC, 0 to 200A "		6	X	X						
201	Power Supply	Basler	14700-102	36 VDC, 0 to 100A "		6	X	X						
202	Power Supply	Basler	TFC-115-100	105 to 130VDC, 0 to 200A, 380 Cps to 420 Cps "		6	X	X						

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1. SECURITY CLASSIFICATION (U)

9. REVISION NO.

Spacecraft TEST INSTRUMENT MAINTENANCE AND CALIBRATION										1. SECURITY CLASSIFICATION (U)		2. PAGE 540 11	
<input checked="" type="checkbox"/> ELECTRICAL & ELECTRONIC <input type="checkbox"/> DIMENSIONAL & PHYSICAL <input type="checkbox"/> OPTICAL INSTRUMENTS										3. DATE 12 NOV 1965		4. REPLACES PAGE(S)	
5. PROGRAM TITLE M III S18/MOL-HSQ										8. CONTRACTOR MAC		DATED	
6. PROGRAM REQUIREMENT NO. 3000										13. REPAIRS		QUANTITY	
7. SYSTEM CODE										14. FY 66		FY 67	
11. RANGE USF'S PRECISION ELECTRONIC, MECHANICAL OR OPTICAL INSTRUMENTS										12. CALIBRATION		14. QUANTITY	
ITEM NO.	NAME/DESIGNATION	NAME OF MANUFACTURER	MODEL NUMBER	RANGE OR SCALE & UNITS	ACCURACY	CYCLE	IN PLACE YES NO	MAJOR MINOR	1	2	3	4	
203	Meter, Power Output	General Radio	583A	0.1 to 5000 MW	Mfg	9	X	X			2	2	
204	Meter, Power Output VSWR	MC Jones Elect	263	2.5 to 20K Imped	Spec	9					2	2	
205	Meter, Power Output VSWR	MC Jones Elect	263.3	0 to 1000 W	"	6	X	X			2	2	
206	Meter, Radio	Hewlett Packard	416A	1000 cps	"	3	X	X			3	3	
207	Meter, Recording Volt-Amp AC	General Electric	8CF72AN9	± 40 cps	"	3	X	X			1	1	
208	Meter, Time Interval	Beckman Berkley	7250	0 to 150 V	"	3	X	X			1	1	
209	Meter, Volt-Amp AC	John Fluke	102	10 u Sec to 1 Sec interval	"	6	X	X			1	1	
210	Meter, Volt DC	Weston	931	1.5 to 600 V	"	3	X	X			1	1	
211	Meter, Volt DC	Weston	931	0.0015 to 30A	0.5%	3	X	X			1	1	
212	Meter, Volt DC	Weston	931	225 uw to 18 kw	"	3	X	X			1	1	
213	Meter, VOM	Bruno	ME70/PSM-6	0 to 50 V	Mfg	3	X	X			5	5	
214	Meter, VOM	Phaostrone	555A	0 to 1000 VAC	Spec	3					5	5	
215	Meter, VOM	Simpson	260	0 to 1000 VDC	"	3	X	X			3	3	
				0 to 15 A AC&DC	"								
				0 to 10 Meg	"								
				0 to 5000V AC&DC	"								
				0 to 10 A DC	"						10	10	
				0 to 20. Meg	"								

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1. SECURITY CLASSIFICATION (U)

9. REVISION NO.

Spacecraft										1. SECURITY CLASSIFICATION		2. PAGE 540 12		
TEST INSTRUMENT MAINTENANCE AND CALIBRATION										(U)		3. DATE 12 Nov 1965		
X ELECTRICAL & ELECTRONIC												4. REPLACES PAGE(S)		
5. PROGRAM TITLE										8. CONTRACTOR		DATED		
T III SLS/W/L-HSQ										MAC				
6. PROGRAM REQUIREMENT NO 3900										7. SYSTEM CODE				
11. RANGE USER'S PRECISION ELECTRONIC, MECHANICAL OR OPTICAL INSTRUMENTS 12.										13. REPAIRS		QUANTITY		
ITEM NO.	NAME/DESIGNATION	NAME OF MANUFACTURER	MODEL NUMBER	RANGE OR SCALE & UNITS	ACCURACY	CYCLE	IN PLACE YES NO	MAJOR MINOR	1	2	3	4	P67	P68
216	Phase Sensitive AC VTVM	Trio Lab.	149-1		Mfg. Spec.									
217	DC Voltmeter	Trio Lab.	107-1											
218	DC Voltmeter 0-1V	Trio Lab.	1C6-1											
219	DC Voltmeter 0-1V, Zero Centered	Trio Lab.	106-2											
220	Primer Scope	Waterman Mark	521A											
221	Freq. Meter	H-P	CR-B-1B											
222	Ratio Bridge	Gertech	109-1											
223	Multi-Range AC VTVM	Trio Lab.	107-1											
224	Multi-Range DC VTVM	Trio Lab.	490H											
225	Pulse Generator	Beckman-Berkley	400 DR											
226	AC VTVM	H-P	412 AR											
227	DC VTVM - Ohmmeter	H-P	V51											
228	Digital Voltmeter	Cubic	AC-2											
229	AC-DC Voltmeter Converter	Cubic	C-1											
230	Digital Voltmeter Control	Fluke	801											
231	Differential Voltmeter	North Atlantic	VM202											
232	Phase Meter	Weston	901											
233	DC Milliammeter	Weston	931											
234	DC Ammeter	Weston	904											
235	AC Ammeter	Weston	433											
236	AC Milliammeter	Weston	585											
237	Oscilloscope	Tektronix	Type 81											
238	Scope Plug-In Unit	Tektronix	Type K											
239	Scope Plug-In Unit	Tektronix	Type B											
240	Scope Plug-In Unit	Tektronix	Type C-A											
241	Scope Plug-In Unit	Tektronix	Type R											
242	Scope Plug-In Unit	Tektronix	250-C1											
243	Impedance Bridge	Brown Inst.												
244	Constant Current Pwr. Supply	Kepeco	SC 32-1											
245	Variable DC Pwr. Supply	NJE Corp.	CR-36-10											

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1. SECURITY CLASSIFICATION (U)

9. REVISION NO.

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DOCUMENTARY PHOTOGRAPHY									
1. SECURITY CLASSIFICATION				2. PAGE 379		3. DATE 12 NOV. 1965		4. REPLACES PAGE(S)	
(U)									
5. TEST PROGRAM				6. PROGRAM REQUIREMENT NO.		7. SYSTEM CODE		8. CONTRACTOR	
TIII SLS/MOL-HSQ				3900				MAC	
9. TEST ITEM NO.		10. TEST CODE		11. FILM SIZE MM		12. FILM TYPE		13. LOCATION	
								14. PURPOSE AND REMARKS	
1	HSQ	16 mm	DCO/ER Color	Motion pictures and stills are required showing spacecraft arriving at PAFB or CCMTA Skid Strip by airlift. Show the preparation for unloading, actual unloading operation and visual inspection performed on the spot. Show all special equipment in use and procedures or changes in procedures used in receiving/unloading operation. All damage to equipment should be covered with at least 2 angles for "establishing" and at least 2 medium and closeup shots of each established area.		Cape		During shooting, one camera should be used for main story and a second camera should be used to shoot inter-cuts, cutaway and insert shots to provide the greatest flexibility in editing. To provide motion picture film for communicating factual data to command, staff and industrial management groups. To present in pictorial form, program objectives, progress, setbacks, methods, techniques and new developments, employed to overcome problem areas. To provide a still picture record of all phases of the MOL-EFT HSQ Program for use in Engineering reports, Progress Reports, and Special reports. One optical film master and one work print is required for motion picture film. One 4X5 color negative and two color prints are required for each still.	
2	H/Q	16 mm	DCO/ER Color	Receiving and inspection of all spacecraft components. Phase I assembly utilizing "establishing" shots, cut-aways and insert shots to show the mechanical and electrical assembly of the spacecraft and the installation of all systems. Phase II assembly showing installation and testing of all ordnance devices and circuits and final buttoning-up and buy-off of the spacecraft. Roll out of the completed spacecraft and transfer to VIB.		Cape - "J" Hangar		One optical film master and one work print are required for motion picture film. One 4x5 color negative and two color prints are required for each still shot.	

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NOV 65



1. SECURITY CLASSIFICATION
(U)

2. REVISION NO.
MT

DOCUMENTARY PHOTOGRAPHY				1. SECURITY CLASSIFICATION		2. PAGE 578.1	
HSQ SPACECRAFT				(U)		3. DATE 12 NOV. 1965	
4. REPLACES PAGE(S)				5. CONTRACTOR		6. DATED	
7. SYSTEM CODE				MAC			
8. PROGRAM REQUIREMENT NO. 3900				9. LOCATION		10. PURPOSE AND REMARKS	
11. ITEM TO BE VIEWED OR COVERED				12. LOCATION		13. PURPOSE AND REMARKS	
14. ITEM TO BE VIEWED OR COVERED				15. LOCATION		16. PURPOSE AND REMARKS	
17. ITEM TO BE VIEWED OR COVERED				18. LOCATION		19. PURPOSE AND REMARKS	
3	HSQ	16mm Movie 4x5 Stills	ECO/ER Color	Matting the spacecraft and the launch vehicle in the VIB. Hooking up the umbilicals and other special test items. All special tests in VIB. One optical film master plus one work print are required for movies. One color negative plus two color prints are required for still shots.	Complex 40 - VIB	Shooting in and around the VIB may require use of professional sun guns for illumination. Every possible attempt should be made to provide complete film sequences of each individual operation.	
4	HSQ	16 mm Movie	B&W	Edited film report of launch showing miscellaneous spacecraft preparation, clearing pad, LCC interior during countdown and actual launch.	Complex 40	This film is to be used for Quick Look orientation of 6555th ATW and SSD Command Staff and Industrial Management. Two "Quick Look" release prints to be ready at T+36 hours or less. This film may be used as a vehicle to illustrate specific problems and how these problems impact MOL program scheduling. One optical film master and one work print required.	
5	HSQ	16 mm Movie	ECO/ER	Launch area centered on Spacecraft.	Complex 40- Pad	Four views. Depending on time of day, weather and wind, these cameras to be positioned to get best coverage. One optical film master and one work print required.	
6	HSQ	16 mm Movie 4 x 5 Still	ECO/ER Color	Miscellaneous views of last minute preparations around launch area and in LCC.	Complex 40	Motion picture and still alert camera to show last minute preparation as well as cover any emergency situation that may arise. "Establishing" shots and close-up should be utilized. Inserts and cutaways as well as short sequences of specific operations should be made. This item will utilize the same personnel as item 4. This item to be coordinated with MAC personnel directly on site. One optical film master	



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1. SECURITY CLASSIFICATION (U)
REVISION NO. 1

DOCUMENTARY PHOTOGRAPHY										1. SECURITY CLASSIFICATION		2. PAGE 378 .2			
HSQ Spacecraft										(U)		3. DATE 12 NOV 1965			
TIII SLS/MOL-HSQ										4. CONTRACTOR MAC		4. REPLACES PAGE(S) -----			
5. TEST PROGRAM										6. PROGRAM REQUIREMENT NO. #3988		7. SYSTEM CODE			
ITEM NO.										12. FILM SIZE MM		13. TYPE			
11. TEST CODE										14. LOCATION		15. PURPOSE AND REMARKS			
6 (continued)															
7 HSQ 16 mm										ECO/ER		Complex 40 - Pad		plus one work print required for motion picture film. One color negative plus two color prints required for each still shot.	
8 HSQ 16 mm Movie 4 x 5 Still										ECO/ER Color		Recovery Area aboard air- craft & ship		Three views. Suggest 1 (one) 10" lens, one 20" lens and 40" lens. Longer focal length tracks may be obtained from Engineering Sequential and ROTI tracking items where required. One optical film master and one work print required. To present in pictorial form the general activity, progress, set-backs, methods, techniques, and new developments employed to overcome problems encountered during recovery operations. One optical film master plus one work print required for movies. One negative plus two prints are required for stills.	
9 HSQ 16 mm Movie 4 x 5 Still										ECO/ER Color		ETR-Station 12		To present factual data relating to the condition of the spacecraft after flight. One optical film master and one work print required for motion picture film. One color negative plus two prints are required for all stills.	
10 HSQ 16 mm Movie										ECO/ER Color		ETR-Station #1		To present in pictorial form the action of the spacecraft/simulated MOL laboratory combination during early flight	

AFMTC FORM 35H
NOV 65



1. SECURITY CLASSIFICATION (U)

2. REVISION NO. 17

[illegible]

HSQ S/C RE-ENTRY MODULE										NORMAL RECOVERY		1. SECURITY CLASSIFICATION		2. PAGE 718			
3. TEST PROGRAM										4. PROGRAM REQUIREMENT		5. SYSTEM CODE		6. DATE 12 NOV. 1965			
7. TEST PROGRAM										8. PROGRAM REQUIREMENT		9. CONTRACTOR		10. REPLACES PAGE(S)			
11. TEST CODE										12. NAME/NOMENCLATURE		13. WEIGHT - POUNDS		14. DIMENSIONS		15. MANAGED	
16. TEST CODE										17. NAME/NOMENCLATURE		18. WEIGHT - POUNDS		19. DIMENSIONS		20. MANAGED	
21. TEST CODE										22. NAME/NOMENCLATURE		23. WEIGHT - POUNDS		24. DIMENSIONS		25. MANAGED	
26. TEST CODE										27. NAME/NOMENCLATURE		28. WEIGHT - POUNDS		29. DIMENSIONS		30. MANAGED	
1	HSQ	Gemini B, HSQ Spacecraft Re-Entry Module	6500	9 Ft.	7.5x 3.2Ft.	X	<p>Transtage cutoff will occur approximately 783 seconds after lift-off. Thirty seconds thereafter the HSQ S/C re-entry module will be separated and the attitude control system (ACS) retrograde mode will be initiated. The coast phase will be continued to atmospheric re-entry at about 985 seconds. The ACS re-entry mode will be initiated when 0.05 g deceleration is sensed. At approximately 10,600 feet the landing system pilot chute will be deployed followed by rendezvous and recovery section release and separation by the pilot chute, the action of which deploys the main parachute. Subsequently, the main attachment/disconnect assembly will release the parachute riser allowing the re-entry module to be suspended on the bridle assembly attached to the re-entry module at two points. At this time the descent and recovery antennas will be extended and the recovery beacon activated. Following impact, which will occur about 1924 seconds after lift-off, the main parachute will be jettisoned, the recovery flashing light activated and the hoist loop extended. The telemetry transmitter will remain energized after impact, transmitting an unmodulated carrier frequency, to serve as a back-up for the UHF recovery beacon. The re-entry module will float, but installation of a flotation safety collar (range user supplied) is required within 30 minutes after impact as a precautionary measure to insure recovery.</p>										

HSQ S/C RE-ENTRY MODULE		NORMAL RECOVERY		1. SECURITY CLASSIFICATION (U)		2. PAGE 710.1
3. PROGRAM TITLE TILL SIS/MOL-HSQ		4. PROGRAM REQUIREMENT CODE 3900		5. SYSTEM CODE		3. DATE 12 Nov. 1965
10. SKETCHES, DIAGRAMS, ETC.		8. CONTRACTOR MAC		9. DATED TEST CODE:		4. REPLACES PAGE(S)

Landing System -

Landing system consists of a pilot parachute and a main parachute assembly.

The pilot parachute, an 18.3 foot diameter ringsail type, is ejected by a mortar at approximately 10,600 feet. The function of the pilot parachute is to separate the R and R section from the re-entry module, deploy the main parachute, and prevent recontact of the R and R section with the main parachute canopy.

The main parachute is an 84.2 foot diameter ringsail parachute, with alternating gores of white and orange, contained in a bag attached to the R and R section. It is extracted in a reefed condition when the pilot parachute pulls the R and R section away from the re-entry module. After the main parachute has been disreefed, and fully inflated, a sequentially activated Pyro device releases the single-point attachment of the risers, re-orienting the re-entry module on a two-point attachment bridle with the small end 35° above the horizon in the proper position for a water landing. The vertical velocity at touch-down is approximately 30 ft./sec. After landing, the main parachute will be automatically jettisoned.

Recovery Aids

UHF Recovery Beacon

Activated: By sequencer at R and R section separation plus 30 sec
Frequency: 243.0 mc
Mode: CW and Pulse Code B
Output Power: 50 watts pulse, 0.75 watt CW

Telemetry

Activated: At prelaunch (remains energized as backup to UHF Recovery Beacon)
Frequency: 259.7 mc
Mode: CW (unmodulated)



HSQ S/C RE-ENTRY MODULE		NORMAL RECOVERY		1. SECURITY CLASSIFICATION		2. PAGE 210.2	
5. PROGRAM TITLE		6. PROGRAM REQUIREMENT		7. SYSTEM CODE		3. DATE 12 Nov. 1965	
TIII SLS/MOL-HSQ		CODE 3900				4. REPLACES PAGE(S)	
10. SKETCHES, DIAGRAMS, ETC.		8. CONTRACTOR		MAC		DATED	
						TEST CODE(S)	

Telemetry (continued)

Output Power: 2 Watts

Flashing Light

At R and R section separation plus 10 min., a Zenon discharge lamp is automatically erected and activated. The flashing rate will be one pulse every four seconds with a pulse duration of two milliseconds. The light is primarily a night time recovery aid and will operate within specifications for 12 hours and with decreased rate for approximately an additional 12 hours.

Fluorescent Sea Marker

Dye marker will be located in a well in the bottom of the cylindrical section of the re-entry module. Upon landing, the dye marker will be submerged and will leave a green-yellow fluorescent streak in the wake of the re-entry module. The width and density of the dye marker streak are dependent upon wind and sea conditions. The lifetime of the dye marker will be approximately two to six hours, depending upon the sea state.

Hazards and Remarks

The HSQ S/C re-entry module may contain hazardous pyrotechnics, hypergolic fuels and numerous high pressure systems. Detailed descriptions of these hazards as well as prescribed handling procedures will be furnished at a later date. Lifting slings, flotation safety devices and other specialized retrieval and handling gear will be provided by the Range User for this operation. Gemini B, HSQ spacecraft specialist will be provided by the Range User in the recovery area to perform the required post retrieval re-entry module operations.

Impact Location and Recovery Area

Exact impact point and recovery area have not been established at this time. The recovery area is a footprint 250 nm in a downrange direction by 50 nm in a crossrange direction with the nominal impact point 50 n.m. SW of Station 12.



SALVAGE AND DISPOSITION									
1. SECURITY CLASSIFICATION				2. PAGE 720		3. DATE 12 Nov 1965		4. REPLACES PAGE(S)	
(U)									
5. PROGRAM TITLE				6. PROGRAM REQUIREMENT		7. SYSTEM CODE		8. CONTRACTOR	
TIII SLS/MOL-HSQ				CODE 3900				MAC	
9. PROGRAM TITLE		10. TEST NO.		11. COMPONENT		12. WEIGHT - POUNDS		13. LOCATION	
1	HSQ	Tape Recorder, PCM		13.9		Lower center console cabin.		<p>Retrieve tape recorder after an abort or a catastrophic failure on the pad. Verify that all power is off. No retrieval attempt should be made until all danger of fire and explosion has been eliminated. All signs of fire or propellant system leakage must be eliminated before attempting access to the interior of the spacecraft. The tape will provide information for analysis of the cause and/or effect of the failure.</p>	
2	HSQ	Tape Recorder, FM Analog		10.8		Right Hand Pallet.		<p>Retrieve tape recorder after an abort or catastrophic failure on the pad. These tapes will provide information for the analysis of the cause and/or effect of the failure. Special instructions and hazards same as Item 1.</p>	
3	HSQ	Overall Spacecraft		Variable N/A (up to 6000 lbs.)				<p>In the event of a mid-air explosion or separation of spacecraft sections on or in the immediate vicinity of the pad, work should be started as soon as practical to locate and collect as much of the spacecraft as possible. This search should be undertaken after emergency egress crews have completed their efforts and after Pad Safety has opened the pad to search crews. The extent of the search should be confined to retrieving parts or sections considered valuable in performing fault analysis.</p>	

AFMTC FORM 37A NOV 61 PREVIOUS EDITION OF THIS FORM IS OBSOLETE.



1. SECURITY CLASSIFICATION (U)

2. REVISION NO.

DATA PROCESSING AND DISPOSITION														1. SECURITY CLASSIFICATION		2. PAGE 910		
5. PROGRAM TITLE TIII SLS/MOL-HSQ														(U)		3. DATE 12 Nov 1965		
6. PROGRAM REQUIREMENT CODE 3900														8. CONTRACTOR All		4. REPLACES PAGE(S)		
7. SYSTEM CODE																DATED		
13. REFERENCE														16. TIME REQ'D.		17. DESIRED DATA PRESENTATION & REMARKS		
14. QTY														15. FINAL RECIPIENT				
15. ORIG														16. TIME REQ'D.				
16. TIME REQ'D.														17. DESIRED DATA PRESENTATION & REMARKS				
17. DESIRED DATA PRESENTATION & REMARKS																		
1	HSQ	LAB TLM	230	1,2	3	6555th ATW Project Office	2H	X										
2	HSQ	GEM TLM	230	3	3		2H	X										
3	HSQ	Metric Data	210-215		4		4H	X										
4	HSQ	Eng. Seq. Data	220		3		24H	X										
5	HSQ	Meteorological	310-350		2		2H	X										
6	HSQ	Communications Recordings	412.1		2		2H	X										
7	HSQ	Documentary Photg.	570		5		24H	X										



FACILITIES GENERAL										1. SECURITY CLASSIFICATION	
PROGRAM TITLE TIII SLS/MOL-HSQ										(U)	
8. PROGRAM IDENTIFICATION CODE 3900										9. CONTRACT/CONTRACT NUMBER MAC	
10. PROGRAM IDENTIFICATION CODE 3900										11. SYSTEM CODE	
12. LOCATION										13. SITE DESIRED	
14. TYPE OF FACILITY										15. SCHEDULE	
16. ITEM NO.										17. FY	
18. TFST CODE										19. CY	
20. LOCATION										21. FY	
22. TYPE OF FACILITY										23. CY	
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DRAWINGS - FACILITIES		1. SECURITY CLASSIFICATION		2. PAGE 101	
3. PROGRAM TITLE		4. (U)		5. MAY 12 Nov 1965	
6. TIII SLS/MOL-HSQ		7. CONTRACTOR		8. REPLACES PAGE(S)	
9. PROJECT NUMBER CODE		10. SYSTEM CODE		11. DATED	
12. DRAWING		13. MAC		14. REFERENCES (Drawings)	
<p>To be supplied at a later date.</p>					
AFMTC FORM 40A NOV 61		1. SECURITY CLASSIFICATION (U)		2. REVISION NO.	



SUPPLEMENTARY

INFORMATION

DOCUMENT CHANGE INSTRUCTION

Form DEN 1016-02 (2-64)

ENCLOSURE: (SSD-CR-63-128,) Supplement 2, (Rev. 1)

TITLE: Program Support Request, MOL-HSQ

INSTRUCTIONS:

Replace the following pages:

40	170	412	540	1011
40.1	190	430	540.1	1011.1
70	210.1	430.1	540.2	Title Page
120	212	431	570	ii
130	214	431.1	710.2	
140	230	431.2	720	
142	230.1	433	810	
143	230.2	434	810.1	
151.2	230.3	435	820	
151.3	230.4	440	820.1	
152.2	230.5	460	840	
157	240	530	910	
158	240.1	532	1010	

Add new pages as follows:

30	155.3	159.18	162.1	570.1	30.1
144	156.1	159.19	162.2	570.2	30.2
152.8	156.2	159.20	162.3	840.1	540.3
152.9	156.3	159.21	190.1	910.1	
152.10	159.10	159.22	215	910.2	
152.11	159.11	159.23	470.5	910.3	
152.12	159.12	159.24	480	910.4	
152.13	159.13	160.4	480.1	910.5	
152.14	159.14	161	530.1	910.6	
152.15	159.15	161.1	530.2	910.7	
154	159.16	161.2	540.4	1010.1	
154.1	159.17	161.3	540.5	1011.2	

REFERENCE: Item 1, Exhibit A, task 5.13 of Contract AF 04(695)-150, line
Item 3C-21 of SSS-TIII-O10 DRD (Rev. 3) dated 15 April 1963
and SCN 1 through DSCN 137

FILE THIS PAGE IN THE FRONT OF THE DOCUMENT TO INDICATE THE LATEST CHANGE.

SSD-CR-63-128 Supplement 2 (Rev 1)

Copy No. _____

Contract AF 04(695)-150

PROGRAM SUPPORT REQUEST

MOL - HSQ

May 1966

Author

W. Pilgrim

Approved



R. B. Demoret
Program Manager
MOL-HSQ

MARTIN COMPANY
Denver 1, Colorado
Aerospace Division of Martin-Marietta Corporation

FOREWORD

This document is submitted under item 1, Exhibit A, Task 5.13 of Contract AF O4(695)-150, in accordance with Line Item 3C-21 Contractor Specification SSS-TIII-O10 DRD (Rev 3), dated 15 April 1963 and SCN 1 thru DSCN 137.

This document defines the range support requirements for the MOL-HSQ Program.

This document is issued as a supplement to SSD-CR-63-128 (Line Item 1K-68).

PROGRAM REQUIREMENT REVISION CONTROL SHEET									
1. SECURITY CLASSIFICATION		2. PAGE 030		3. DATE 18 May 1966		4. REPLACES PAGE(S)		5. DATED	
Unclassified						New			
6. PROGRAM REQUIREMENT NO. 3900		7. SYSTEM CODE		8. CONTRACTOR MC		9. INSTRUCTIONS / REMARKS		10. INSTRUCTIONS / REMARKS	
11. CLASS		12. CLASS		13. CLASS		14. CLASS		15. CLASS	
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30	New								
40	Revised								
40.1	Revised								
70	Revised								
120	Revised								
130	Revised								
140	Revised								
142	Revised								
143	Revised								
144	New								
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13. APPROVAL		14. APPROVAL		15. APPROVAL		16. NATIONAL RANGE ACCEPTANCE		17. IF INCLOSURES ARE WITHDRAWN, (not attached) THE CLASSIFICATION OF THIS PAGE WILL BE CANCELLED IN ACCORDANCE WITH FAR 37H, AFR 208-1.	
AFMTC FORM 30C MAR 61		PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.		FEB 59		AFRD		1. SECURITY CLASSIFICATION (U)	
								REVISION NO. 1 MT COPY NO. 1	

PROGRAM REQUIREMENT REVISION CONTROL SHEET									
1. SECURITY CLASSIFICATION		2. PAGE 030.1		3. DATE 18 May 1966		4. REPLACES PAGE(S)		5. NEW	
6. CONTRACTOR MC		7. SYSTEM CODE		8. PROGRAM REQUIREMENT NO. 3900		9. INSTRUCTIONS / REMARKS		10. INSTRUCTIONS / REMARKS	
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162.3	New					435	Revised		
170	Revised					440	Revised		
190	Revised					460	Revised		
190.1	New					470.5	New		
210.1	Revised					480	New		
212						480.1	New		
214						530	New		
215	New					530.1	New		
230	Revised					530.2	New		
230.1	Revised					532	Revised		
230.2	Revised					540	Revised		
230.3	Revised					540.1	Revised		
230.4	Revised					540.2	Revised		
230.5	Revised					540.3	Revised		
240	Revised					540.4	New		
240.1	Revised					540.5	New		
412	Revised					570	Revised		
430	Revised					570.1	New		
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431	Revised					710.2	Revised		
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431.2	Revised	X				810	Revised	X	
13. APPROVAL				14. APPROVAL				15. APPROVAL	
16. NATIONAL RANGE ACCEPTANCE									
17. IF INCLOSURES ARE WITHDRAWN, (not attached) THE CLASSIFICATION OF THIS PAGE WILL BE CANCELLED IN ACCORDANCE WITH F.A.R. 37H, AFR 208-1.				1. SECURITY CLASSIFICATION (U)		9. REVISION NO. 1		COPY NO. 1	

PROGRAM REQUIREMENT REVISION CONTROL SHEET										1. SECURITY CLASSIFICATION		2. PAGE 830.2	
5. TEST PROGRAM		6. PROGRAM REQUIREMENT NO. 3900		7. SYSTEM CODE		8. CONTRACTOR MC		9. DATE 18 MAY 1966		4. REPLACES PAGE(S)			
TIII SLS/MOL-HSQ										New			
10. PAGE NO.		11. CLASS		12. INSTRUCTIONS/REMARKS		13. INSTRUCTIONS/REMARKS		14. APPROVAL		15. NATIONAL RANGE ACCEPTANCE			
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30.2	New	X											
12. APPROVAL		14. APPROVAL		16. APPROVAL		18. APPROVAL		1. SECURITY CLASSIFICATION		9. REVISION NO. 1			
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AFMJC FORM 30C MAR 61 PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE. FEB 59



17. IF INCLOSURES ARE WITHDRAWN (NOT ATTACHED) THE CLASSIFICATION OF THIS PAGE WILL BE CANCELLED IN ACCORDANCE WITH PAR 37M, APR 205-1.

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TABLE OF CONTENTS										1. SECURITY CLASSIFICATION (U)		2. PAGE 040.1		
3. DATE 18 May 1966										4. REPLACES PAGE(S)		5. DATE		
6. CONTRACTOR										7. SYSTEM CODE		8. REVISION NO.		
9. PROGRAM TITLE TIII SIS/MOL-HSQ										10. DATE OF ORIGINAL PAGE		11. SECURITY CLASSIFICATION (U)		
12. PROGRAM REQUIREMENT CODE 3900										13. ADDITIONAL PAGE NO.		14. PAGE DATE (DAY-MO-YEAR)		
15. CLASS.										16. CLASS.		17. CLASS.		
18. S C U										19. S C U		20. S C U		
✓	11.	12.	13.	14.	15.	16.	17.	18.	19.	20.	21.	22.	23.	24.
		PAGE NO.	ADDITIONAL PAGE NO.	PAGE TITLE	CLASS.	PAGE DATE (DAY-MO-YEAR)	✓	PAGE NO.	ADDITIONAL PAGE NO.	PAGE TITLE	CLASS.	PAGE DATE (DAY-MO-YEAR)		
X	435			CLOSED LOOP TELEVISION	1		X	810	.1	AIR & SEACRAFT				
X	440			TIMING	1		X	820	.1	NON-RANGE AIRCRAFT				
X	450			SEQUENCER	1		X	830	.1	SEACRAFT REQUIREMENTS				
X	460	.1		VISUAL COUNTOFF & STATUS INDICATOR	2		X	840	.1	TARGET REQUIREMENTS				
X	470	.1-.5		DATA HANDLING SYSTEM	6		X			RANGE AIRCRAFT				
X	471			DATA HANDLING SYSTEM (DRAWINGS)	2									
X	480	.1		COMMAND CONTROL	2									
X	490			OTHER SUPPORT INSTRUMENTATION			X	910	.1-.7	DATA PROCESSING				
X				MATERIEL & SERVICES						DATA PROCESSING & DISPOSITION				
X	510	.1-.3		SERVICES - GENERAL	4									
X	520	.1-.2		VEHICLES & GROUND HANDLING EQUIPMENT	1					FACILITIES				
X	530			PROPELLANTS, GASES & CHEMICALS	3		X	1010	.1	FACILITIES - GENERAL				
X	531			AIRCRAFT & GROUND VEHICLE FUELS			X	1011	.1, .2	FACILITIES (DRAWING)				
X	532			WISC, LUBRICANTS, HYDRAULIC FLUIDS, PRESERVATIVES, ETC.	1			1020		LAUNCH FACILITIES				
X	540	.1-.5		CHEMICAL & PHYSICAL ANALYSIS	6									
X	550			BIOSCIENCE REQUIREMENTS - GENERAL										
X	560	.1-.13		TEST INSTRUMENTATION, MAINTENANCE & CALIBRATION SCHEDULE	14									
X	570	.1, .2		DOCUMENTARY PHOTOGRAPHY	3									
				TRANSPORTATION LOGISTICS										
	610			SURFACE LOGISTICS SCHEDULE										
X	620			AIR LOGISTICS SCHEDULE	1									
				RECOVERY										
X	710	.1, .2		NORMAL RECOVERY	3									
X	720			SALVAGE & DISPOSITION	1									



SPECIAL ABBREVIATIONS AND NOMENCLATURE				1. SECURITY CLASSIFICATION (U)	2. PAGE 972
3. TEST PROGRAM TIII SLS/MOL-HSQ		6. PROGRAM REQUIREMENT NO. 3900		7. SYSTEM CODE	3. DATE 18 May 1966
10. WORD OR ABBREVIATION		11.		8. CONTRACTOR MC/MAC	4. REPLACES PAGE(S) DATED
HSQ	Heat Shield Qualification Flight Test Manned Orbiting Laboratory McDonnell Aircraft Company Martin Company Micrometeoroid Detector Heat Transfer Test Capsule				
MOL					
VAC					
MC					
KAD					
HTTC					

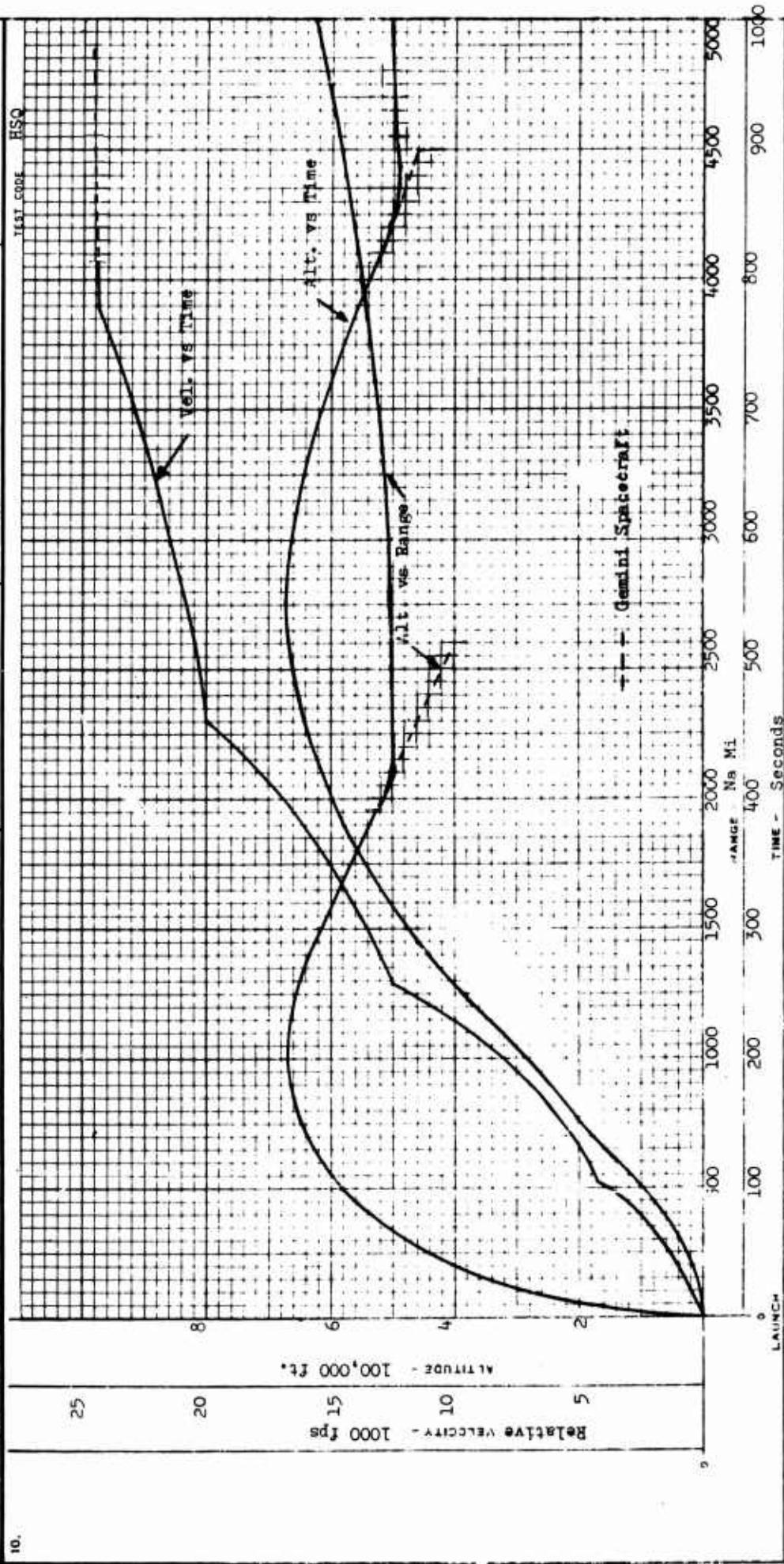


PROGRAM OBJECTIVES										1. SECURITY CLASSIFICATION UNCLASSIFIED		2. PAGE 130.											
8. TEST PROGRAM TITI SLS/MOL-HSQ										6. PROGRAM REQUIREMENT NO. 3900		7. SYSTEM CODE		8. CONTRACTOR MC/MAC									
10. TEST ITEM NO.										11. TEST CODE										12. CATEGORY 13.		14. TEST AGENCY	
11. TEST NO.										12. TEST CODE										13. TEST AGENCY		14. TEST AGENCY	
1										HSQ										X		Verify the Gemini heat shield as modified to accommodate the MOL crew-transfer method	
2										HSQ										X		Collect data on ascent environment for the payload vehicle structure	
3										HSQ										X		Demonstrate structural integrity and control capability of the Titan IIIC for launch and ascent with a MOL-type payload	
4										HSQ										X		Demonstrate the MOL outboard profile compatibility with the ITL concept	
5										HSQ										X		Demonstrate recovery/retrieval techniques	
6										HSQ										X		Exercise selected segments of the MOL tracking network	
7										HSQ										X		Simulated Lab/Vehicle Accommodation of unmanned experiments.	
AFMTC FORM 61 31D										PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.										1. SECURITY CLASSIFICATION UNCLASSIFIED		9. REVISION NO. MT 1	

NRD

1. SECURITY CLASSIFICATION		2. PAGE 140		3. DATE 3 January 1966	
UNCLASSIFIED		4. REPLACES PAGE(S)		Same	
5. PROGRAM TITLE		6. PROGRAM REQUIREMENT CODE		7. SYSTEM CODE	
TIII SLS/MOL-HSQ		3900		8. CONTRACTOR/CONTRACT NUMBER	
				MC/MAC	
9. TEST NO.		10. TEST DATE		11. TEST LOCATION	
1		HSQ			
12. TEST DESCRIPTION		13. USER		14. TEST LOCATION	
<p>A Titan IIIC launch vehicle with minor modification to enable Gemini spacecraft separation and integrated countdown will be launched from Eastern Test Range (ETR) with an azimuth of 107.5 deg. The flight vehicle is comprised of a simulated MOL laboratory with secondary experiments and a Gemini spacecraft.</p> <p>First transtage burnout velocity and flight path angle are such that the desired conditions for Gemini spacecraft re-entry are obtained. The spacecraft will be recovered in an impact area near Ascension Island. This portion of the general mission constitutes the Heat Shield Qualification (HSQ) portion.</p> <p>The transtage will be re-oriented after Gemini separation and a second and third transtage burn will maneuver the Simulated Laboratory and secondary experiments into an approximately circular 160 n mi orbit.</p>		HOURS/TEST			
		RANGE			

TRAJECTORY DATA - LAUNCH			
1. PROGRAM TITLE THI SLS/MOL-HSQ		2. PAGE 143	
3. PROGRAM REQUIRMENT CODE 3900		3. DATE 3 January 1966	
4. SYSTEM CODE		4. REPLACES PAGE(S)	
5. CONTRACTOR MC		DATED	
6. SECURITY CLASSIFICATION (U)		TEST CODE HSQ	



TRAJECTORY DATA - ORBITAL & SPACE			
1. SECURITY CLASSIFICATION		2. PAGE 144	
Unclassified		3. DATE 3 January 1966	
4. REPLACES PAGE(S)		5. CONTRACTOR MC	
6. PROGRAM REQUIREMENT NO. 3900		7. SYSTEM CODE	
8. TEST PROGRAM TIII SLS/MOL-HSQ		9. DATED	
10. TEST CODE:			

Diagram labels: EARTH, 160 NM CIRCULAR ORBIT, ORBIT PLANE, EQUATOR, POLAR AXIS, CS.

Scale: 0.1 INCH = 1000 NAUT. MILES, 0.2 INCH = 2000 NAUT. MILES, 0.4 INCH = 4000 NAUT. MILES, 0.8 INCH = 8000 NAUT. MILES.

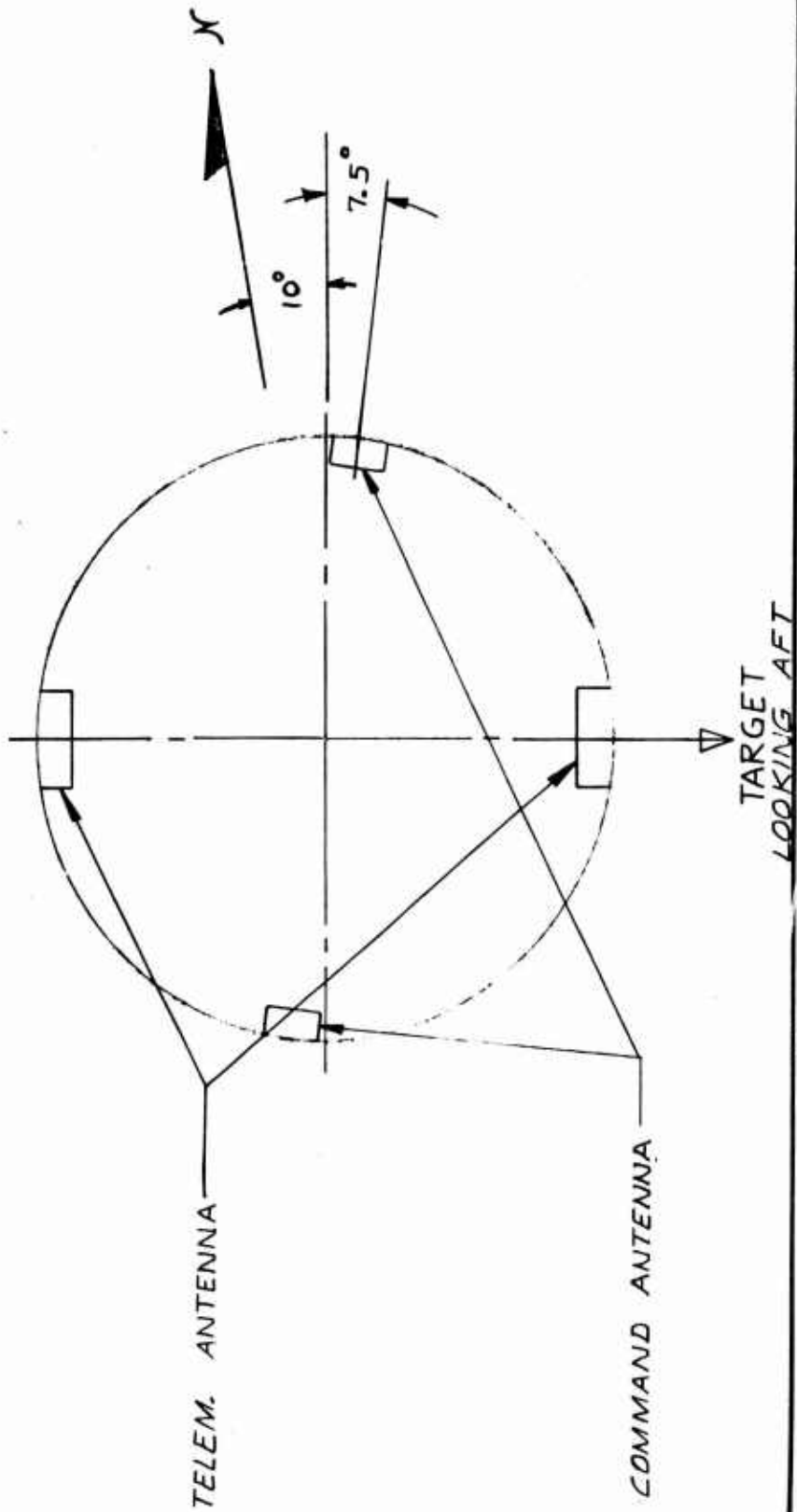


DRAWING - MISSILE OR VEHICLE LAB and Gemini		1. SECURITY CLASSIFICATION Unclassified		2. PAGE 151, 2	
3. PROGRAM TITLE TIII SLS/MOL-Hs'2		4. PROGRAM REQUIREMENT CODE 3900		5. DATE 3 JANUARY 1966 6. REPLACES PAGE(S) (Same) DATED 12 November 1965	
7. SYSTEM CODE		8. CONTRACTOR MC/MAC		9. TEST CODE HSQ	
10. DIMENSIONAL DRAWING OF MISSILE OR VEHICLE SHOWING PAINT PATTERN, CHARACTERISTIC MARKINGS, LOCATION OF ANTENNAE, ETC.					

STA. -513.500
 STA. -383.000
 STA. -327.000
 STA. -160.000
 STA. -77.000
 VHF TELEMETRY ANTENNA (2)
 TRANSTAGE INTERFACE
 GEMINI SEPARATION PLANE
 ADAPTER
 COMMAND ANTENNA (2)



DRAWING - MISSILE OR VEHICLE Lab Antenna Location -- TIII Sta.-160.00		1. SECURITY CLASSIFICATION Unclassified		15.3 3 January 1965
2. PROGRAM NAME TIII SLS/MOL-HSQ	3. PROGRAM REQ/ROMAT CODE 3900	4. SYSTEM CODE MC/MAC	5. CONTRACTOR (same)	6. DATE 12 November 1965
12. 1. MISSILE OR VEHICLE SHOWN IN PATTERN, CHARACTERISTIC MARKINGS, LOCATION OF ANTENNAE, ETC.				
13. 1. DATE HSQ				



HSQ Spacecraft (Real Time)		TELEMETRY SYSTEM		1. SECURITY CLASSIFICATION		2. PAGE 152.2	
5. TEST PROGRAM		6. PROGRAM REQUIREMENT NO. 3900		7. SYSTEM CODE		3. DATE 1 April 1966	
TIII SLS/MOL-HSQ		11. TRANSMITTER CHARACTERISTICS		12. ANTENNA CHARACTERISTICS		4. REPLACES PAGE(S) 152.2	
10. GENERAL INFORMATION		11. TRANSMITTER CHARACTERISTICS		12. ANTENNA CHARACTERISTICS		DATED	
A. TEST CODE: HSQ		A. LOCATION: Reentry Module		A. LOCATION: STA. 2147.78, 185.0° AZ.		13. DATA TO BE TRANSMITTED & REMARKS	
B. NUMBER OF CHANNELS: CONTINUOUS: N/A		B. TYPE: Crystal Controlled		Whip STA. 2147.78, 185.0° AZ.		This information to be supplied prior to launch. See applicable OR supplement.	
C. NUMBER OF SEGMENTS/CHANNEL: N/A		C. MODEL: (52-85713)*(81-9005-65)**		Stub STA. 2233.97, parallel AZ.			
D. STATE NON-IRIG PARTICULARS: None		D. MANUFACTURER: RCA		WITH REFERENCE TO TRUE NORTH AFTER THE VEHICLE IS ERECTED ON THE LAUNCH PAD.			
E. Data Format: Page 152.6		E. LINK FREQUENCY: 259.7		B. TYPE: Stubs and Whip			
F. Filtering: Page 152.7		F. TYPE OF MODULATION: PCM/FM		C. MODEL: 52-85101-17 52-85103-301			
		G. BAND WIDTH AT 3DB: 102.4 KC		D. MANUFACTURER: MAC			
		H. MIN. DEVIATION: ±38.4 KC		E. FREQUENCY RANGE: 225 - 460 MC			
		I. MAX. DEVIATION: ±25.8		F. TUNABLE FIXED TUNED			
		J. FREQUENCY STABILITY: 2		G. PREDOMINANT POLARIZATION: (CHECK ONLY ONE)			
		K. AVERAGE POWER: 2 WATTS		<input checked="" type="checkbox"/> VERTICAL			
		L. CODING AND/OR MODULATION (PCM): Serial Binary Coded Digital, Most Significant Bit First Standard IRIG-NRZC.		<input type="checkbox"/> HORIZONTAL			
		M. SPECTRUM ANALYSIS REPORTS ON THIS TRANSMITTER: <input type="checkbox"/> HAVE BEEN PROVIDED TO THE FREQUENCY CONTROL BRANCH		<input type="checkbox"/> CIRCULAR: SENSE: <input type="checkbox"/> LH <input type="checkbox"/> RH			
		<input checked="" type="checkbox"/> WILL BE AVAILABLE (DATE)		<input type="checkbox"/> OTHER			
		NOTE: A "one" will give a positive freq. excursion. "Zero" will give a lower Freq. excursion.		H. MAXIMUM GAIN IN DB WITH RESPECT TO ISOTROPIC: 0 DB			
		**MAC Part Number		I. MAIN LOBE BEAMWIDTH IN DEGREES AT 3DB POINTS: ELEVATION 40 AZIMUTH OMNI			
		**RCA Part Number		J. EFFECTIVE RADIATED POWER: 2 WATTS			
		NOTE: TRANSMITTING SYSTEMS WHICH REQUIRE EXTENSIVE PERIODS OF RF CHECKOUT TIME WILL BE REQUIRED TO BE EQUIPPED WITH A CLOSED LOOP OR NON-RADIATING CHECKOUT DEVICE.		K. INDICATE THE AVAILABILITY DATE OF THE ANTENNA PATTERN MEASUREMENTS, PER AFMTC REG 80-1a:			
				L. IS THERE AVAILABLE A SPECTRUM RESPONSE REPORT ON THIS ANTENNA? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO (IF YES, PROVIDE ONE COPY)			



AFMTC FORM 31N PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

REVISION NO. 1

Simulated Laboratory PAM/FM/FM				TELEMETRY SYSTEM		1. SECURITY CLASSIFICATION		2. PAGE 1528	
B. TEST PROGRAM		C. PROGRAM REQUIREMENT		7. SYSTEM CODE		B. CONTRACTOR		3. DATE 18 May 1966	
TIII SLS/MOL-HSQ		NO. 3900				MC		4. REPLACES PAGE(S)	
10. GENERAL INFORMATION		11. TRANSMITTER CHARACTERISTICS		12. ANTENNA CHARACTERISTICS		13. DATA TO BE TRANSMITTED & REMARKS		DATED	
<p>A. TEST CODE: HSQ; ZX</p> <p>B. NUMBER OF CHANNELS: Four on continuous; orbit at ground command</p> <p>C. COMMUTATED: 180 total (Inc Sync)</p> <p>C. NUMBER OF SEGMENTS/CHANNEL: CHANNEL SEGMENTS</p> <p>IRIG 13 --- 90x0.5 NRZ/PAM</p> <p>IRIG 14 --- 90x0.5 NRZ/PAM</p> <p>IRIG C --- 26(90x0.5NRZ/PAM)</p> <p>IRIG E --- 26(90x0.5NRZ/PAM)</p> <p>D. STATE NON-IRIG PARTICULARS:</p> <p>1. Two solid state PAM commutators; 90 ch by 0.5 Frame/sec 100% duty cycle (NRZ/PAM). Frame sync pulse on channels 86 and 90 zero amplitude (minimum signal) and channels 87, 88, & 89 full scale (maximum signal). Channel 1, zero amplitude calibration (minimum signal) and channel 2, 90% amplitude (90% of maximum signal).</p> <p>2. A/B FM Tape Recorder Record Time 185 minutes nominal with playback 26 times record speed (7.1 minutes). Playback of data is in reverse order from record.</p>		<p>A. LOCATION: Simulated Lab.</p> <p>B. TYPE: Solid State</p> <p>C. MODEL: Cubic 102725; Martin SK808DO</p> <p>D. MANUFACTURER: Cubic Corporation</p> <p>E. LINK FREQUENCY: 236.2</p> <p>F. TYPE OF MODULATION: PAM/FM/FM</p> <p>G. BAND WIDTH AT 3DB: 0.25</p> <p>H. MIN. DEVIATION: ± 106 KC</p> <p>I. MAX. DEVIATION: ± 144 KC</p> <p>J. FREQUENCY STABILITY: ± 11.8</p> <p>K. AVERAGE POWER: 10</p> <p>L. CODING AND/OR MODULATION (PCM): N/A</p> <p>M. SPECTRUM ANALYSIS REPORTS ON THIS TRANSMITTER:</p> <p><input type="checkbox"/> HAVE BEEN PROVIDED TO THE FREQUENCY CONTROL BRANCH</p> <p><input checked="" type="checkbox"/> WILL BE AVAILABLE <u>Present Time</u> (DATE)</p> <p>NOTE: TRANSMITTING SYSTEMS WHICH REQUIRE EXTENSIVE PERIODS OF RF CHECKOUT TIME WILL BE REQUIRED TO BE EQUIPPED WITH A CLOSED LOOP OR NON-RADIATING CHECKOUT DEVICE.</p>		<p>A. LOCATION: STA. -160 on BLO (100°) AZ.</p> <p>STA. -160 on BLO (280°) AZ.</p> <p>STA. AZ.</p> <p>STA. AZ.</p> <p>WITH REFERENCE TO TRUE NORTH AFTER THE VEHICLE IS ERECTED ON THE LAUNCH PAD.</p> <p>B. TYPE: Slotted probe-fed cavity</p> <p>C. MODEL: 804A350110-069</p> <p>D. MANUFACTURER: Martin Company</p> <p>E. FREQUENCY RANGE: 230 - 252 MC</p> <p>F. <input type="checkbox"/> TUNABLE <input checked="" type="checkbox"/> FIXED TUNED</p> <p>G. PREDOMINANT POLARIZATION: (CHECK ONLY ONE)</p> <p><input checked="" type="checkbox"/> VERTICAL (Parallel to roll axis)</p> <p><input type="checkbox"/> HORIZONTAL</p> <p><input type="checkbox"/> CIRCULAR: SENSE: <input type="checkbox"/> LH <input type="checkbox"/> RH</p> <p><input type="checkbox"/> OTHER</p> <p>H. MAXIMUM GAIN IN DB WITH RESPECT TO ISOTROPIC: 5.4 DB</p> <p>I. MAIN LOBE BEAMWIDTH IN DEGREES AT 3DB POINTS: ELEVATION N/A AZIMUTH N/A</p> <p>J. EFFECTIVE RADIATED POWER: 8.03 WATTS</p> <p>K. INDICATE THE AVAILABILITY DATE OF THE ANTENNA PATTERN MEASUREMENTS, PER AFMTC REG 80-14: 1 December 1965</p> <p>L. IS THERE AVAILABLE A SPECTRUM RESPONSE REPORT ON THIS ANTENNA? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO (IF YES, PROVIDE ONE COPY)</p> <p>*At antenna RF connector.</p>		<p>Scientific data on orbit for 6 days. Transmission is controlled from ground command. Data from two 90 x 0.5 NRZ/PAM commutators (including time) will be recorded on a two track FM tape recorder. At ground command, the recorded PAM data will be reproduced at a compression ratio of 26 into IRIG subcarrier oscillator (SCO) channels C&E. Simultaneously the real time NRZ/PAM data will modulate IRIG SCO's 13 and 14. The SCO multiplex will FM modulate a 10 watt solid state transmitter for transmission.</p>			



AFMTC FORM 31N PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

1. SECURITY CLASSIFICATION (U)

REVISION NO. 1

Simulated Laboratory PAM/FM/FM (cont)			1. SECURITY CLASSIFICATION UNCLASSIFIED		2. PAGE 152.9	
5. TEST PROGRAM TIII SLS/MOL-HSQ			6. PROGRAM REQUIREMENT NO. 3900		3. DATE 18 May 1966	
7. SYSTEM CODE			8. CONTRACTOR MC		4. REPLACES PAGE(S) -----	
9. DATED -----			10. DATA TO BE TRANSMITTED & REMARKS			
11. TRANSMITTER CHARACTERISTICS			12. ANTENNA CHARACTERISTICS			13. DATA TO BE TRANSMITTED & REMARKS
10. GENERAL INFORMATION			11. TRANSMITTER CHARACTERISTICS			12. ANTENNA CHARACTERISTICS
A. TEST CODE:			A. LOCATION: STA.			AZ.
B. NUMBER OF CHANNELS:			B. TYPE:			AZ.
CONTINUOUS:			C. MODEL:			AZ.
COMMUTATED:			D. MANUFACTURER:			AZ.
C. NUMBER OF SEGMENTS/CHANNELS:			E. LINK FREQUENCY:			
CHANNEL			F. TYPE OF MODULATION:			
			G. BAND WIDTH AT 3DB:			
			H. MIN. DEVIATION:			
			I. MAX. DEVIATION:			
			J. FREQUENCY STABILITY:			
			K. AVERAGE POWER:			
			L. CODING AND/OR MODULATION (PCM):			
D. STATE NON-RIG PARTICULARS:			M. SPECTRUM ANALYSIS REPORTS ON THIS TRANSMITTER:			
3. Data- PAM data on SCO channels 13 and 14 will be real time and in a forward direction (i.e., calibration on channels 1, 2 and data on 3, 4, 5, etc). PAM data on SCO C&E (tape recorder playback data) will be in reverse direction (i.e., data appears to be on ch. 1, 2, 3, etc with calibration on channels 84 and 85.)			NOTE: TRANSMITTING SYSTEMS WHICH REQUIRE EXTENSIVE PERIODS OF RF CHECKOUT TIME WILL BE REQUIRED TO BE EQUIPPED WITH A CLOSED LOOP OR NON-RADIATING CHECKOUT DEVICE.			
AFMTC FORM 31N JUN 61			PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.			
AFMTC FORM 31N JUN 61			1. SECURITY CLASSIFICATION UNCLASSIFIED			2. REVISION NO. MT

TELEMETRY SYSTEM				1. SECURITY CLASSIFICATION		2. PAGE 152.10	
OV-1				UNCLASSIFIED		3. DATE 18 May 1966	
5. TEST PROGRAM TIII SLS/MOL-HSQ				7. SYSTEM CODE		4. REPLACES PAGE(S) _____	
6. PROGRAM REQUIREMENT NO. 5900				8. CONTRACTOR (GD/C) MC		DATED _____	
10. GENERAL INFORMATION		11. TRANSMITTER CHARACTERISTICS		12. ANTENNA CHARACTERISTICS		13. DATA TO BE TRANSMITTED & REMARKS	
A. TEST CODE: YW, YH B. NUMBER OF CHANNELS: CONTINUOUS: 0 COMMUTATED: 4 C. NUMBER OF SEGMENTS/CHANNEL: CHANNEL 12 30 15 30 16 30 17 30 D. STATE NON-IRIG PARTICULARS: Channel 12 commutation rate is 1.6 fps.		A. LOCATION: CVI-6S Satellite B. TYPE: PAM/FM/FM C. MODEL: CTM 201-B D. MANUFACTURER: Conic Corp. E. LINK FREQUENCY: 230.9 mc F. TYPE OF MODULATION: FM G. BAND WIDTH AT 3DB: 0.3 H. MIN. DEVIATION: - I. MAX. DEVIATION: 125 kc J. FREQUENCY STABILITY: ± 23.0 K. AVERAGE POWER: 2 WATTS L. CODING AND/OR MODULATION (PCM): M. SPECTRUM ANALYSIS REPORTS ON THIS TRANSMITTER: <input checked="" type="checkbox"/> HAVE BEEN PROVIDED TO THE FREQUENCY CONTROL BRANCH <input type="checkbox"/> WILL BE AVAILABLE _____ (DATE) NOTE: TRANSMITTING SYSTEMS WHICH REQUIRE EXTENSIVE PERIODS OF RF CHECKOUT TIME WILL BE REQUIRED TO BE EQUIPPED WITH A CLOSED LOOP OR NON-RADIATING CHECKOUT DEVICE.		A. LOCATION: STA. -326.5 STA. STA. STA. WITH REFERENCE TO TRUE NORTH AFTER THE VEHICLE IS ERECTED ON THE LAUNCH PAD. B. TYPE: Whip C. MODEL: 64-24304 D. MANUFACTURER: GD/C E. FREQUENCY RANGE: 230.9 MC F. <input type="checkbox"/> TUNABLE <input checked="" type="checkbox"/> FIXED TUNED G. PREDOMINANT POLARIZATION: (CHECK ONLY ONE) <input type="checkbox"/> VERTICAL <input type="checkbox"/> HORIZONTAL <input type="checkbox"/> CIRCULAR SENSE: <input type="checkbox"/> LH <input type="checkbox"/> RH <input checked="" type="checkbox"/> OTHER Linear H. MAXIMUM GAIN IN DB WITH RESPECT TO ISOTROPIC: 0 I. MAIN LOBE BEAMWIDTH IN DEGREES AT 3DB POINTS: ELEVATION _____ AZIMUTH - J. EFFECTIVE RADIATED POWER: 1.85 WATTS K. INDICATE THE AVAILABILITY DATE OF THE ANTENNA PATTERN MEASUREMENTS, PER AFMTC REG 80-14: NA L. IS THERE AVAILABLE A SPECTRUM RESPONSE REPORT ON THIS ANTENNA? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO (IF YES, PROVIDE ONE COPY) Polar coordinated plots of the antenna are available.		Satellite and experimental payload data will be transmitted and recorded by TLM ground station or portable test equipment upon command to satellite.	



TELEMETRY SYSTEM			1. SECURITY CLASSIFICATION		2. PAGE 152.11	
OV-4			(U)		3. DATE 18 May 1966	
5. TEST PROGRAM			7. SYSTEM CODE		4. REPLACES PAGE(S)	
TIII SLS/MOL-HSQ			MC		DATED	
10. GENERAL INFORMATION			11. TRANSMITTER CHARACTERISTICS		12. ANTENNA CHARACTERISTICS	
A. TEST CODE: SX Link 1, 245.3mc B. NUMBER OF CHANNELS: 1 C. CONTINUOUS: 1 COMMUTATED: C. NUMBER OF SEGMENTS/CHANNEL: 1 CHANNEL SEGMENTS			A. LOCATION: STA. NYA AZ. STA. AZ. STA. AZ. WITH REFERENCE TO TRUE NORTH AFTER THE VEHICLE IS ERECTED ON THE LAUNCH PAD. B. TYPE: Quasi Isotropic Dipole C. MODEL: D. MANUFACTURER: Raytheon Co E. FREQUENCY RANGE: 245.3 + 0.1 MC F. <input type="checkbox"/> TUNABLE <input checked="" type="checkbox"/> FIXED TUNED G. PREDOMINANT POLARIZATION: (CHECK ONLY ONE) <input type="checkbox"/> VERTICAL <input checked="" type="checkbox"/> HORIZONTAL <input type="checkbox"/> CIRCULAR SENSE: <input type="checkbox"/> LH <input type="checkbox"/> RH <input type="checkbox"/> OTHER H. MAXIMUM GAIN IN DB WITH RESPECT TO (1) ISOTROPIC: 2 DB I. MAIN LOBE BEAMWIDTH IN DEGREES AT 3DB POINTS: ELEVATION 180° azimuth 180° J. EFFECTIVE RADIATED POWER: 1.7 WATTS K. INDICATE THE AVAILABILITY DATE OF THE ANTENNA PATTERN MEASUREMENTS, PER AFMTC REG 80-14: scaled down patterns avail. L. IS THERE AVAILABLE A SPECTRUM RESPONSE REPORT ON THIS ANTENNA? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO (IF YES, PROVIDE ONE COPY)		13. DATA TO BE TRANSMITTED & REMARKS One of three wide band links used to transmit experiment data Transmission on all three links will be initiated by a single ground command. Turn off is accomplished by ground command on an 8 minute timer. Timer set to turn off at approx. 4 min. T/M system utilized on-orbit only. (1) Due to S/C tumbling, gain can be as low as -3 db.	
D. STATE NON-IRIG PARTICULARS: Deviation of + 400 KC. No calibration or synchronization transmitted.			M. SPECTRUM ANALYSIS REPORTS ON THIS TRANSMITTER: <input checked="" type="checkbox"/> HAVE BEEN PROVIDED TO THE FREQUENCY CONTROL BRANCH <input type="checkbox"/> WILL BE AVAILABLE Sept 65 (DATE)		NOTE: TRANSMITTING SYSTEMS WHICH REQUIRE EXTENSIVE PERIODS OF RF CHECKOUT TIME WILL BE REQUIRED TO BE EQUIPPED WITH A CLOSED LOOP OR NON-RADIATING CHECKOUT DEVICE.	



AFMTC FORM 31N JUN 61 PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

1. SECURITY CLASSIFICATION

(U)

9.

REVISION NO. 1
MT

OV-4			TELEMETRY SYSTEM		1. SECURITY CLASSIFICATION (U)		2. PAGE 152.12 3. DATE 18 May 1966 4. REPLACES PAGE(S) ----- DATE	
5. TEST PROGRAM TIII SLS/MOL-HSQ		6. PROGRAM REQUIREMENT NO. 3900		7. SYSTEM CODE		8. CONTRACTOR MC		
10. GENERAL INFORMATION		11. TRANSMITTER CHARACTERISTICS		12. ANTENNA CHARACTERISTICS		13. DATA TO BE TRANSMITTED & REMARKS		
<p>A. TEST CODE: SX, Link 2, 249.9mc B. NUMBER OF CHANNELS: 1 CONTINUOUS: 1 COMMUTATED: C. NUMBER OF SEGMENTS/CHANNEL: SEGMENTS CHANNEL</p> <p>D. STATE NON-IRIG PARTICULARS: Deviation of + 400 KC. No calibration of synchronization transmitted.</p>		<p>A. LOCATION: Receiver Satellite B. TYPE: 1500F9 Wide Band FM C. MODEL: TX 3903 D. MANUFACTURER: Sonex E. LINK FREQUENCY: 249.9 F. TYPE OF MODULATION: FM G. BAND WIDTH AT 3DB: H. MIN. DEVIATION: 3 KC I. MAX. DEVIATION: + 400 KC J. FREQUENCY STABILITY: 0.005% K. AVERAGE POWER: 2 WATTS L. CODING AND/OR MODULATION (PCM): FM modulated by 1st of AM experimental receiver.</p> <p>M. SPECTRUM ANALYSIS REPORTS ON THIS TRANSMITTER: <input checked="" type="checkbox"/> HAVE BEEN PROVIDED TO THE FREQUENCY CONTROL BRANCH <input type="checkbox"/> WILL BE AVAILABLE (DATE)</p> <p>NOTE: TRANSMITTING SYSTEMS WHICH REQUIRE EXTENSIVE PERIODS OF RF CHECKOUT TIME WILL BE REQUIRED TO BE EQUIPPED WITH A CLOSED LOOP OR NON-RADIATING CHECKOUT DEVICE.</p>		<p>A. LOCATION: STA. STA. STA. STA. WITH REFERENCE TO TRUE NORTH AFTER THE VEHICLE IS ERECTED ON THE LAUNCH PAD. B. TYPE: Quasi Isotropic Dipole C. MODEL: D. MANUFACTURER: Raytheon Co E. FREQUENCY RANGE: 249.9 + 0.1 MC F. <input type="checkbox"/> TUNABLE <input checked="" type="checkbox"/> FIXED TUNED G. PREDOMINANT POLARIZATION: (CHECK ONLY ONE) <input type="checkbox"/> VERTICAL <input checked="" type="checkbox"/> HORIZONTAL <input type="checkbox"/> CIRCULAR: SENSE: <input type="checkbox"/> LH <input type="checkbox"/> RH <input type="checkbox"/> OTHER H. MAXIMUM GAIN IN DB WITH RESPECT TO (1) ISOTROPIC: 2 DB I. MAIN LOBE BEAMWIDTH IN DEGREES AT 3DB FROM APPLICATION POINTS: ELEVATION ALTIMUTH J. EFFECTIVE RADIATED POWER: 1.7 WATTS K. INDICATE THE AVAILABILITY DATE OF THE ANTENNA PATTERN MEASUREMENTS, PER AFMTC REG 80-14: Scaled down patterns avail. L. IS THERE AVAILABLE A SPECTRUM RESPONSE REPORT ON THIS ANTENNA? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO (IF YES, PROVIDE ONE COPY)</p>		<p>One of three wide band links used to transmit experiment data. Transmission on all three links will be initiated by a single ground command. Turn off is accomplished by command of an 8 minute timer. Timer set to turn off at approx 4 min. T/M system utilized on-orbit only. (1) Due to S/C tumbling, gain can be as low as -3 db.</p>		



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JUN 61

REVISION NO. 1
MT

TELEMETRY SYSTEM			1. SECURITY CLASSIFICATION		2. PAGE 152.15	
3. TEST PROGRAM TIII SLS/MOL-HSQ			(U)		3. DATE 18 May 1966	
4. PROGRAM REQUIREMENT NO. 3900			B. CONTRACTOR MC		4. REPLACES PAGE(S) ---	
10. GENERAL INFORMATION			11. TRANSMITTER CHARACTERISTICS		12. ANTENNA CHARACTERISTICS	
A. TEST CODE: SX, Link 3, 255.1mc B. NUMBER OF CHANNELS: 1 C. NUMBER OF SEGMENTS/CHANNEL: 1 CHANNEL SEGMENTS			A. LOCATION: STA. B. TYPE: 1500F9 Wide Band FM C. MODEL: TX 3903 D. MANUFACTURER: Sonex E. LINK FREQUENCY: 255.1 F. TYPE OF MODULATION: FM G. BAND WIDTH AT 30dB: 3 KC H. MAX. DEVIATION: + 400 KC I. FREQUENCY STABILITY: 0.005% J. AVERAGE POWER: 2 WATTS K. CODING AND/OR MODULATION (PCM): L. CODING AND/OR MODULATION (PCM): FM modulated by IF of AM experimental receiver.		A. LOCATION: STA. B. TYPE: STA. C. MODEL: STA. WITH REFERENCE TO TRUE NORTH AFTER THE VEHICLE IS ERECTED ON THE LAUNCH PAD. B. TYPE: Quasi Isotropic Monopole C. MODEL: D. MANUFACTURER: Raytheon Co E. FREQUENCY RANGE: 255.1 + 0.1 MC F. <input type="checkbox"/> TUNABLE <input checked="" type="checkbox"/> FIXED TUNED G. PREDOMINANT POLARIZATION: (CHECK ONLY ONE) <input type="checkbox"/> VERTICAL <input checked="" type="checkbox"/> HORIZONTAL <input type="checkbox"/> CIRCULAR: SENSE: <input type="checkbox"/> LH <input type="checkbox"/> RH <input type="checkbox"/> OTHER H. MAXIMUM GAIN IN DB WITH RESPECT TO (1) ISOTROPIC: 4 DB I. MAIN LOBE BEAMWIDTH IN DEGREES AT 308 POINTS: ELEVATION not applicable J. EFFECTIVE RADIATED POWER: 1.8 WATTS K. INDICATE THE AVAILABILITY DATE OF THE ANTENNA PATTERN MEASUREMENTS, PER AFMTC REG 80-14: Scaled down patterns avail. L. IS THERE AVAILABLE A SPECTRUM RESPONSE REPORT ON THIS ANTENNA? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO (IF YES, PROVIDE ONE COPY)	
D. STATE NON-RIG PARTICULARS: Deviation of + 400 KC. No calibration or synchronization transmitted.			M. SPECTRUM ANALYSIS REPORTS ON THIS TRANSMITTER: <input checked="" type="checkbox"/> HAVE BEEN PROVIDED TO THE FREQUENCY CONTROL BRANCH <input type="checkbox"/> WILL BE AVAILABLE (DATE)		(1) Due to S/C tumbling, gain can be as low as -3 db. T/M system utilized on-orbit only.	
13. DATA TO BE TRANSMITTED & REMARKS One of three wide band links used to transmit experiment data. Transmission on all three links will be initiated by a single ground command. Turn off is accomplished by command or an 8 minute timer. Timer set to turn off at approx. 4 min. T/M system utilized on-orbit only.						



AFMTC FORM 31N JUN 61 PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

1. SECURITY CLASSIFICATION

(U)

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NOTE: TRANSMITTING SYSTEMS WHICH REQUIRE EXTENSIVE PERIODS OF RF CHECKOUT TIME WILL BE REQUIRED TO BE EQUIPPED WITH A CLOSED LOOP OR NON-RADIATING CHECKOUT DEVICE.

TELEMETRY SYSTEM				1. SECURITY CLASSIFICATION	2. PAGE 15214
OV-4				(U)	3. DATE 18 May 1966
TIII SLS/MOL-HSQ				OV4 - AFAL	4. REPLACES PAGE(S) _____
5. TEST PROGRAM		6. PROGRAM REQUIREMENT NO. 3900		7. SYSTEM CODE	8. CONTRACTOR
10. GENERAL INFORMATION		11. TRANSMITTER CHARACTERISTICS		12. ANTENNA CHARACTERISTICS	
A. TEST CODE: SX, Link 4 230.9 B. NUMBER OF CHANNELS: 1 C. NUMBER OF SEGMENTS/CHANNEL: 1 CHANNEL 30(30x2.5) 75 SPS D. STATE NON-IRIG PARTICULARS.		A. LOCATION: Receiver Satellite STAGE B. TYPE: 300F9 FM C. MODEL: TR 16B D. MANUFACTURER: United Electro Dynamics E. LINK FREQUENCY: 230.9 MC F. TYPE OF MODULATION: FM G. BAND WIDTH AT 3DB: 56.4 KC H. MIN. DEVIATION: 11.6 KC I. MAX. DEVIATION: 2 WATTS J. FREQUENCY STABILITY: 11.6 KC K. AVERAGE POWER: 2 WATTS L. CODING AND/OR MODULATION (PCM): PAM/FM/FM		A. LOCATION: STA. AZ. STA. AZ. STA. AZ. STA. AZ. WITH REFERENCE TO TRUE NORTH AFTER THE VEHICLE IS ERECTED ON THE LAUNCH PAD. B. TYPE: Quesi Isotropic Dipole C. MODEL: D. MANUFACTURER: Raytheon Co E. FREQUENCY RANGE: 230.9 + 0.1 MC F. <input type="checkbox"/> TUNABLE <input checked="" type="checkbox"/> FIXED TUNED G. PREDOMINANT POLARIZATION: (CHECK ONLY ONE) <input type="checkbox"/> VERTICAL <input checked="" type="checkbox"/> HORIZONTAL <input type="checkbox"/> CIRCULAR SENSE: <input type="checkbox"/> LH <input type="checkbox"/> RH <input type="checkbox"/> OTHER H. MAXIMUM GAIN IN DB WITH RESPECT TO (1) ISOTROPIC: 2 DB I. MAIN LOBE BEAMWIDTH IN DEGREES AT 3DB POINTS: ELEVATION J. EFFECTIVE RADIATED POWER: 1.6 WATTS K. INDICATE THE AVAILABILITY DATE OF THE ANTENNA PATTERN MEASUREMENTS, PER AFMTC REG 80-14: Scaled down patterns avail. L. IS THERE AVAILABLE A SPECTRUM RESPONSE REPORT ON THIS ANTENNA? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO (IF YES, PROVIDE ONE COPY)	
13. DATA TO BE TRANSMITTED & REMARKS		Transmissions of systems (satellite condition and command status) data. A keyed command will be used to control turn on of this link. Turn off will be by ground command or by 8 minute timer. Timer set to turn off at approx. 4 min. T/M system utilized on-orbit only. (1) Due to S/C tumbling, gain can be as low as -3 db.			



AFMTC FORM 31N JUN 61 PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

1. SECURITY CLASSIFICATION (U)

9. REVISION NO. 1
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TELEMETRY SYSTEM			1. SECURITY CLASSIFICATION		2. PAGE 152.15	
3. TEST PROGRAM TIII SIS/MOL-HSQ			(U)		3. DATE 18 May 1966	
4. PROGRAM REQUIREMENT NO. 3900			B. CONTRACTOR OV4 - AFAL		4. REPLACES PAGE(S) ---	
10. GENERAL INFORMATION			11. TRANSMITTER CHARACTERISTICS		12. ANTENNA CHARACTERISTICS	
A. TEST CODE: SX, Link 5 230.9 B. NUMBER OF CHANNELS: 1 C. NUMBER OF SEGMENTS/CHANNEL: 1 CHANNEL NA 30 (30-2.5)			A. LOCATION: STA. AZ. B. TYPE: 300F9 FM C. MODEL: TR 16 B D. MANUFACTURER: United Electro Dynamics E. LINK FREQUENCY: 230.9 MC F. TYPE OF MODULATION: FM G. BAND WIDTH AT 3DB: MC H. MIN. DEVIATION: MC I. MAX. DEVIATION: ± 56.4 KC J. FREQUENCY STABILITY: ± 11.6 KC K. AVERAGE POWER: 2 WATTS L. CODING AND/OR MODULATION (PCM):		A. LOCATION: STA. AZ. B. TYPE: Quasi Isotropic Dipole C. MODEL: WITH REFERENCE TO TRUE NORTH AFTER THE VEHICLE IS ERECTED ON THE LAUNCH PAD. D. MANUFACTURER: Raytheon Co E. FREQUENCY RANGE: 230.9 ± 0.1 MC F. <input type="checkbox"/> TUNABLE <input checked="" type="checkbox"/> FIXED TUNED G. PREDOMINANT POLARIZATION: (CHECK ONLY ONE) <input type="checkbox"/> VERTICAL <input checked="" type="checkbox"/> HORIZONTAL <input type="checkbox"/> CIRCULAR SENSE: <input type="checkbox"/> LH <input type="checkbox"/> RH <input type="checkbox"/> OTHER H. MAXIMUM GAIN IN DB WITH RESPECT TO (1) ISOTROPIC: 2 DB I. MAIN LOBE BEAMWIDTH IN DEGREES AT 3DB POINTS: ELEVATION J. EFFECTIVE RADIATED POWER: 1.6 WATTS K. INDICATE THE AVAILABILITY DATE OF THE ANTENNA PATTERN MEASUREMENTS, PER AFMTC REG 80-14: Scaled down patterns avail. L. IS THERE AVAILABLE A SPECTRUM RESPONSE REPORT ON THIS ANTENNA? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO (IF YES, PROVIDE ONE COPY)	
D. STATE NON-IRIG PARTICULARS: 75 SPS			M. SPECTRUM ANALYSIS REPORTS ON THIS TRANSMITTER: <input checked="" type="checkbox"/> HAVE BEEN PROVIDED TO THE FREQUENCY CONTROL BRANCH <input type="checkbox"/> WILL BE AVAILABLE (DATE)		Transmission of systems (satellite condition and command status) data. A keyed command will be used to control turn on of this link. Turn off will be by ground command or by 8 minute timer. Timer set to turn off at approx. 4 min. T/M system utilized on-orbit only. (1) Due to S/C tumbling, gain can be as low as -3 db.	
NOTE: TRANSMITTING SYSTEMS WHICH REQUIRE EXTENSIVE PERIODS OF RF CHECKOUT TIME WILL BE REQUIRED TO BE EQUIPPED WITH A CLOSED LOOP OR NON-RADIATING CHECKOUT DEVICE.			1. SECURITY CLASSIFICATION (U)		2. REVISION NO. 1	



COMMAND CONTROL				1. SECURITY CLASSIFICATION UNCLASSIFIED		2. PAGE 154.	
5. TEST PROGRAM TIII SLS/MOL-ESQ		6. PROGRAM REQUIREMENT NO. 3900		7. SYSTEM CODE		3. DATE 3 JANUARY 1966	
8. CONTRACTOR MC		9. REPLACES PAGE(S) New		10. SECURITY CLASSIFICATION UNCLASSIFIED		4. DATED	
10. GENERAL INFORMATION		11. RECEIVER CHARACTERISTICS		12. ANTENNA CHARACTERISTICS		13. CONTROL SYSTEM DESCRIPTION	
<p>A. TEST CODE:</p> <p>B. TRANSMISSION OF COMMAND FUNCTIONS: TYPE: <input checked="" type="checkbox"/> ON-OFF <input type="checkbox"/> PROPORTIONAL</p> <p>C. NO. OF ON-OFF CHANNELS TO BE TRANSMITTED: 12</p> <p>D. BANDWIDTH OF PROPORTIONAL CHANNELS N/A KC INCLUSIVE.</p> <p>E. REAL-TIME MONITORING OF TRANSMITTED COMMAND FUNCTIONS REQUIRED: <input type="checkbox"/> YES <input type="checkbox"/> NO</p> <p>F. A FLIGHT-CONTROL CONSOLE <input type="checkbox"/> WILL <input checked="" type="checkbox"/> WILL NOT BE USED.</p> <p>G. PORTION, OR DURATION, OF FLIGHT THROUGHOUT WHICH RADIO COMMAND IS REQUIRED: First 7/3 days of orbital life.</p> <p>H. IN-FLIGHT TELEMETRY DATA: CHANNEL # The telemetry R-F LINK # system</p> <p>I. DOES COMMAND RECEIVER HAVE A REMOTE TURN-OFF CAPABILITY? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO</p>		<p>A. LOCATION: Simulated Lab STAGE: MC</p> <p>B. TYPE: Solid State-Relay Contact</p> <p>C. MODEL: 2624D/1801A Output</p> <p>D. MANUFACTURER: R S Electronics</p> <p>E. NUMBER INSTALLED: 2</p> <p>F. FREQUENCY RANGE: 430 + .01% MC</p> <p>G. <input type="checkbox"/> TUNABLE <input checked="" type="checkbox"/> FIXED TUNED</p> <p>H. INTERMEDIATE FREQUENCY: 1ST 50 MC, 2ND none MC</p> <p>I. LOCAL OSCILLATOR FREQUENCY <input checked="" type="checkbox"/> ABOVE, <input type="checkbox"/> BELOW COMMAND TRANSMITTER FREQUENCY.</p> <p>J. METHOD OF FREQUENCY CONTROL: 1ST OSC: crystal, 2ND OSC: K. FREQUENCY STABILITY: ± .043 MC</p> <p>L. SENSITIVITY: MAXIMUM: -93 DBM AT 430 MC MINIMUM: -87 DBM AT 430 MC NOMINAL: -90 DBM AT 430 MC</p> <p>M. SELECTIVITY: (OVERALL) 30B 20DB 80DB Down at ± 2 MC</p> <p>N. BANDWIDTH (FOR A GIVEN OPTIMUM SIGNAL) AT: 40DB DOWN KC 40DB DOWN KC 80DB DOWN KC</p> <p>O. DEVIATION REQUIRED: ± 60 to ± 75 kc tone</p> <p>P. CAPTURE RATIO: 60 DB</p> <p>Q. SPURIOUS RESPONSE REJECTION: 60 DB</p> <p>R. ATTACH A PLOT OF SIGNAL PLUS NOISE TO NOISE RATIO IN DB VERSUS INPUT SIGNAL IN UV OVER A RANGE OF 1-100 UV. 5.0V= 60 db N</p> <p>S. A SPECTRUM ANALYSIS REPORT ON THIS RCVR HAS BEEN PROVIDED TO THE FREQUENCY CONTROL BRANCH <input checked="" type="checkbox"/> WILL BE AVAILABLE (DATE)</p>		<p>A. LOCATION: STA. 190 .75°WL60 AZ, Quad I AZ, STA. 190 .75°WL60 AZ, Quad III AZ, WITH REFERENCE TO TRUE NORTH AFTER THE VEHICLE IS ERECTED ON THE LAUNCH PAD.</p> <p>B. TYPE: Crossed Slot</p> <p>C. MODEL: 80801J01100-029</p> <p>D. MANUFACTURER: Martin Company</p> <p>E. FREQUENCY RANGE: 406-430</p> <p>F. <input type="checkbox"/> TUNABLE <input checked="" type="checkbox"/> FIXED TUNED</p> <p>G. PREDOMINANT POLARIZATION: (CHECK ONLY ONE) <input type="checkbox"/> VERTICAL <input checked="" type="checkbox"/> HORIZONTAL <input type="checkbox"/> CIRCULAR, RH <input type="checkbox"/> LH <input type="checkbox"/> RH</p> <p>H. MAXIMUM GAIN IN DB WITH RESPECT TO ISOTROPIC: 90% Spher. CW at -10 DB</p> <p>I. MAXIMUM NULL IN DB WITH RESPECT TO ISOTROPIC: DB</p> <p>J. LOSS IN TRANSMISSION LINES: 1 DB AT 430 MC</p> <p>K. ANTENNA DIPLEXER: Hybrid Junction</p> <p>L. REQUIRED SIGNAL STRENGTH - CALCULATED UV/METER, ASSUMING LEFT-HAND-SENSED, CIRCULARLY POLARIZED TRANSMITTING ANTENNA.</p> <p>M. ATTACH ANTENNA PATTERN MEASUREMENTS AND A SCHEMATIC OF ANTENNA SYSTEM AS PER AFMTC REG 80-7. Page 154.1</p> <p>N. IS THERE AVAILABLE A SPECTRUM RESPONSE REPORT ON THIS ANTENNA? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO (IF YES, PROVIDE ONE COPY)</p>		<p>The receiver will be used for receipt of command control functions related primarily to the data acquisition system and to experiment operation control.</p> <p>Destruct functions are not incorporated.</p> <p>IRIG tones in dual combination are used for control functions. See page 480 for details.</p>	
14. COORDINATION SIGNATURE		15. SECURITY CLASSIFICATION UNCLASSIFIED		16. REVISION NO. MT			



1. SECURITY CLASSIFICATION			2. PAGE		
UNCLASSIFIED			154.1		
3. DATE 3 January 1966			4. REPLACES PAGE(S)		
5. PROGRAM TITLE Simulated Lab			6. PROGRAM REQUIREMENT CODE: 3900		
7. SYSTEM CODE			8. CONTRACTOR MC		
9. SECURITY CLASSIFICATION			10. INSTRUMENTATION SYSTEM:		
UNCLASSIFIED			11. ANTENNA TYPE:		
12. ANTENNA POLARIZATION:			13. POLARIZATION PLOTTED:		
14. FREQUENCY RANGE:			15. MODEL SCALE:		
16. ANTENNA PATTERN PLOT			17. TEST CODE:		
18. ANTENNA PATTERN PLOT			19. PHYSICAL LOCATION OF POINT P ₁ :		
20. FREQUENCY RANGE:			21. SECURITY CLASSIFICATION		
UNCLASSIFIED			22. REVISION NO.		

Antenna Contour plots associated with page 154 are essentially the same as those for the transtage and are contained in the Flight Termination System Report, Program 624A, SSD-CR-63-123.

1. Stg. 0 Burn - Figure VII-51

2. Stgs. I & II Burn - Figure VII-52

3. Stg. III Burn - Figure VII-53

Antenna Contour plots associated with page 154 are essentially the same as those for the transtage and are contained in the Flight Termination System Report, Program 624A, SSD-CR-63-123.

1. Stg. 0 Burn - Figure VII-51

2. Stgs. I & II Burn - Figure VII-52

3. Stg. III Burn - Figure VII-53

(P₁)

(P₂)

(P₃)

ROLL PLANE

PITCH PLANE

YAW PLANE

TAIL 180

FORM 50F
FEB 62

ORDNANCE ITEMS						SECURITY CLASSIFICATION		(U)		PAGE 155.3	
Experiments										DATE 18 May 1966	
TIII SLS/MOL-HSQ						PROGRAM REQUIREMENT NO.		7. SYSTEM CODE		CONTRACTOR	
MC						DATED		NEW		REPLACES PAGE(S)	
THIIS SLS/MOL-HSQ						3900		PC-61-003		PC-61-003	
MANUFACTURER						PART NUMBER		INSTR. LEAD		LEAD LENGTH-METERS	
QTY						LAB		PT		UN-SHIELDED UNINST	
TYPE						LAB		NO		SHIELDED UNINST	
PURPOSE						LAB		NO		MAX MIN PIRE	
TEST CODE						LAB		NO		MAX MIN PIRE	
ITEM NO.						LAB		NO		MAX MIN PIRE	
1	YX	Satellite Rel	Pres Cart	LAB	1	Hi-Shear	PC-61-003	PT	NO		
2	SX	Satellite Rel	Pres Cart	LAB	8	Space Ordnance Sys.	SO 1-193				
3	SX	Rocket Ig.	Igniter	LAB	1	Thiokol-Elkton	X-1240		NO		
4	SX	Satellite Rel	Rkt Motor	LAB	1	Thiokol	TE-M-52-5		N/A		
5	VX	Open Door	Pres Cart	LAB	2	McCormick Selph	805890-1	PT	NO		
6	VX	Antenna Rel	Squib	LAB	1	Holex	5801	PT	NO		
7	HSQ	Rocket Ig	Igniters	LAB	5	Thiokol-Elkton	TE-350	PT	NO		
8	HSQ	Gemini Sep.	Rkt Motors	LAB	5	Thiokol-Elkton	TE-344	PT	N/A		
9	KX	Oper. Valves	Fres Cart	LAB	2	Pyrometics Inc.	3519-11	PT	NO		
10	BX	Open Doors	Pres Cart	LAB	4	McCormick-Selph	805890-1				
11	CX	Open Doors	Pres Cart	LAB	2	McCormick-Selph	805890-1				
12	SX	Antenna Rel	Sq.Bdl.Act	LAB	4	Hercules Powder Co.	BA60AO				
13	YX	IIT Canister	Squib	LAB	6	Hi-Shear	PC-36	PT	NO		
14	YX	Conax Ejection	Squib	LAB	18	Hercules Powder	CC-58	PT	NO		
15	YX	Canister Squib	Squib	LAB	12	Holex	5208-5	PT	NO		
						To be supplied					

NOTE: ALL ORDNANCE DEVICES WHICH ARE DESIGNED TO PERMIT SAFE HANDLING AND INSTALLATION IN THE RADIATION ENVIRONMENT DESCRIBED IN AFMTC-TN-94, R.F. RADIATION HAZARDS, AFMTC, WILL BE SO NOTED BY PLACING AN "S" UNDER "R F SAFE", COLUMN 24. ORDNANCE ITEMS NOT MEETING THIS CRITERION REQUIRE AN EXPLANATION OF THE PRECAUTIONS TO BE TAKEN.

AFMTC FORM 31V JUN 61 PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

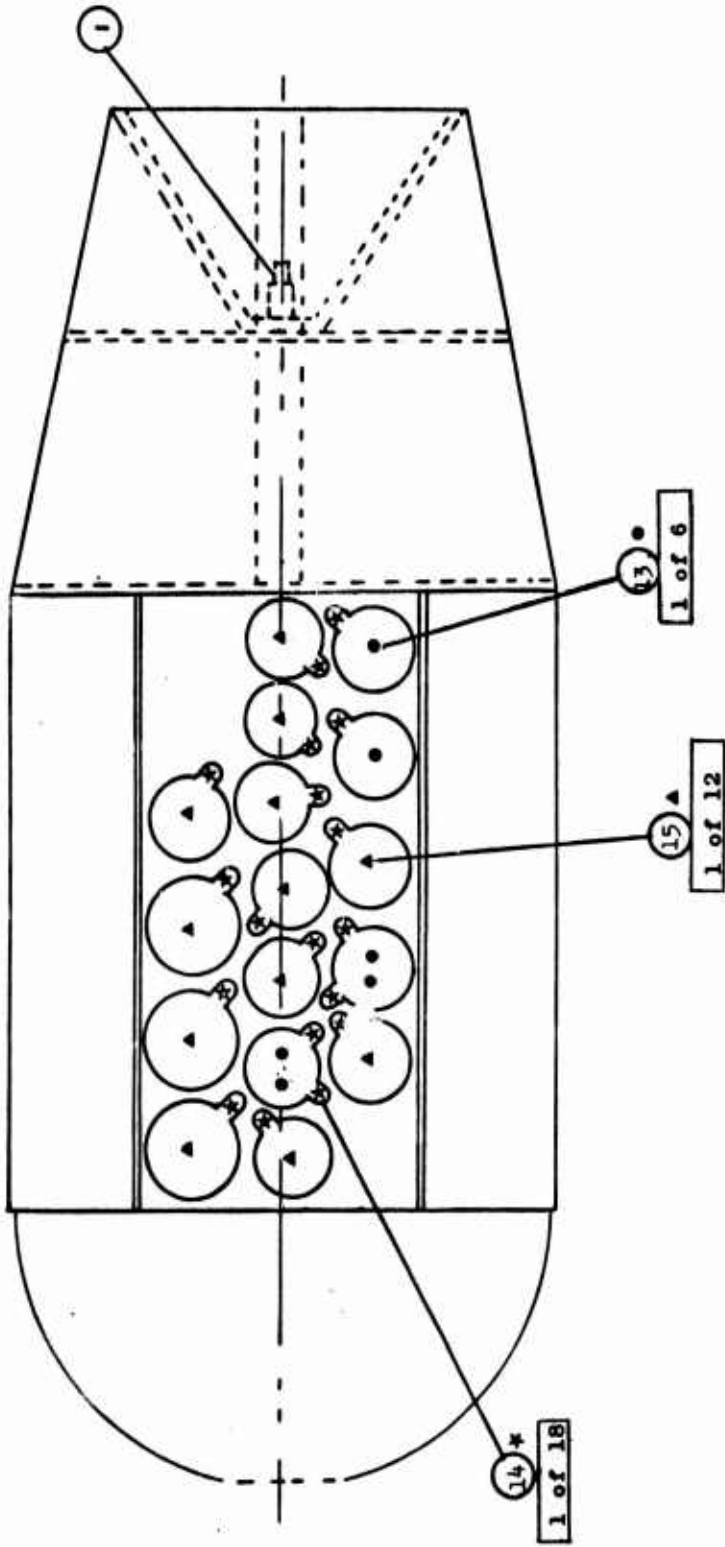
(U) REVISION NO. 1

Sim Lab/Exp		ORDNANCE (Drawing)		1. SECURITY CLASSIFICATION (U)		2. PAGE / 154.1	
5. TEST PROGRAM TIII SLS/MOL-HSQ		6. PROGRAM REQUIREMENT NO. 3900		7. SYSTEM CODE		3. DATE 18 May 1966	
10. DIMENSIONAL DRAWING OF MISSILE/TEST VEHICLE SHOWING THE LOCATION OF ALL ORDNANCE ITEMS		8. CONTRACTOR MC		9. DATED		4. REPLACES PAGE(S) New	
TEST CODE: HSQ, ZX							

Device	Purpose of Ordinance
1. OV-1	Satellite Release
2. OV-4	Satellite Release
3. OV-4	Rocket Ignition
4. OV-4	Satellite Eject
5. Orbis-Low	Open Door
6. Orbis-Low	Antenna Release
7. Retro Igniter	Rocket Igniter
8. Retro Rockets	Gemini Separation
9. Fuel Cell	Operate Valves
10. Micrometeroid Detectors	Open Doors
11. Heat Transfer Test Capsule	Open Door
12. OV-4	Antenna Rel
13. OV-1	IIT Canister
14. OV-1	Conox Ejection Canister
15. OV-1	



ORDNANCE (Drawing)		1. SECURITY CLASSIFICATION UNCLASSIFIED		2. PAGE 154.2
QV-1				3. DATE 18 May 1966
TEST PROGRAM	THI SLS/MOL-HSQ	6. PROGRAM REQUIREMENT NO. 3900	7. SYSTEM CODE	4. REPLACES PAGE(S) New
19. DIMENSIONAL DRAWING OF MISSILE/TEST VEHICLE SHOWING THE LOCATION OF ALL ORDNANCE ITEMS		8. CONTRACTOR MC/GDC		DATED ---
TEST CODE: ---				



NOTE: Encircled numbers reference item number of ordnance listed on page 155.3



ORDNANCE (Drawing)		1. SECURITY CLASSIFICATION		2. PAGE / 156.3	
OV - 4		Unclassified		3. DATE 18 May 1966	
TII SLS/MOL-HSQ		6. CONTRACTOR MC		4. REPLACES PAGE(S) --- Now ---	
5. TEST PROGRAM		7. SYSTEM CODE		DATED ---	
6. PROGRAM REQUIREMENT NO. 3900				TEST CODE:	
10. DIMENSIONAL DRAWING OF MISSILE/TEST VEHICLE SHOWING THE LOCATION OF ALL ORDNANCE ITEMS					

HSQ SPACECRAFT		OTHER VEHICLEBORNE EQUIPMENT		1. SECURITY CLASSIFICATION		2. PAGE 157	
5. PROGRAM TITLE		6. PROGRAM REQUIREMENT CODE		7. SYSTEM CODE		3. DATE 1 April 1966	
TIII SLS/MOL-HSQ		3900		(U)		4. REPLACES PAGE(S) 157	
10. ITEM NO.		11. TEST CODE		8. CONTRACTOR/CONTRACT NUMBER		DATED	
				MAC			
BRIEF DESCRIPTION OF ALL OTHER VEHICLEBORNE EQUIPMENT SUCH AS FLASHING LIGHTS, DATA CAPSULES, ETC.							
1	HSQ	Flashing Recovery Light:		<p>A. Extends at main parachute jettison.</p> <p>B. Flashing rate at least 15 flashes per minute.</p> <p>C. Flash duration at least 10 milliseconds at the 50 percent intensity points.</p> <p>D. Intensity shall be a minimum of 1.2 candle-seconds per flash measured at a look-angle, perpendicular to either major light surface.</p> <p>E. White Light. On a clear night the light will be visible for approximately 50 n. m. from an aircraft flying at 12K feet or higher.</p>			
2	HSQ	Dye Marker Assembly:		<p>A. Dye marker package installed below spacecraft flotation line on forward end of the RCS section. Package is exposed after R&R section is jettisoned.</p> <p>B. Dye marker shall consist of a yellow fluorescent dye.</p> <p>C. Deployed at first contact with water.</p>			
3	HSQ	Hoist Loop:		<p>A. Hoist loop cable extended at main parachute jettison.</p> <p>B. Provides an attach point for lifting devices used for recovering the spacecraft.</p>			
4	HSQ	Main Parachute:		<p>A. Orange and white-Ring sail.</p> <p>B. Deploys at approximately 10.6 K feet.</p> <p>C. Jettisoned by timer 10 minutes after pilot chute deployed.</p> <p>D. 84.2 feet diameter.</p>			
5	HSQ	PCM Tape Recorder:		<p>A. Single track recorder mounted on the left pallet.</p> <p>B. Records spacecraft instrumentation data through flight.</p>			
6	HSQ	Pallet Tape Recorder:		<p>A. Seven track recorder mounted on the right pallet.</p> <p>B. Part of the wideband recording system.</p> <p>C. Records Vibration data.</p>			

AFMTR FORM 42
SEP 64



1. SECURITY CLASSIFICATION

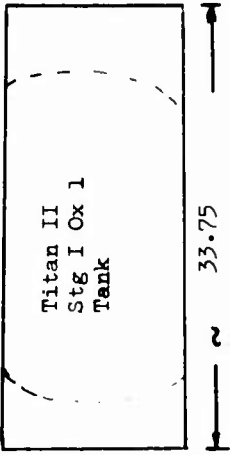
(U)

9. REVISION NO.

1
30

SYSTEM MISSION CAPABILITIES				1. SECURITY CLASSIFICATION (U)		2. PAGE 158	
5. TEST PROGRAM TITLE TIII SLS/MOL-HSQ		6. PROGRAM REQUIREMENT CODE 3900		7. SYSTEM CODE		3. DATE 3 January 1966	
10. CHARACTERISTICS		11. SUPPORT REQUIREMENTS		8. CONTRACTOR MC/ MAC		4. REPLACES PAGE(S) Same	
A. MISSION OF OPERATIONAL WEAPON SYSTEM To gather environmental data and qualify selected hardware prior to manned flight. 1. Heat Shield Qualification 2. Gather Environmental Data on spacecraft during ascent. Accommodate Unmanned Experiments		1. ITL System (VIB, SMAB, LAUNCH COMPLEX 40, Rail System) 2. TM Data receiving and recording network. 3. Radar tracking and metric data recording network. 4. Atmospheric data gathering and recording network. 5. Recovery forces (aircraft, ships, men, etc.,) and equipment as required to recover the HSQ re-entry module.		OPERATIONAL PROFILE/SKETCH OF TACTICAL SITUATION		DATED 12 November 1965	
B. SIGNIFICANT CHARACTERISTICS AND CAPABILITIES 1. Unmanned suborbital flight, (S/C) 2. Spacecraft equipped with recovery system. 3. Insertion of stage III, simulated lab, and secondary experiments into 160 n mi circular orbit.							
C. CONSTRAINTS INFLUENCING DESIGN Earliest possible manned flight.							
D.							



SYSTEM FUNCTIONAL DESCRIPTION				1 SECURITY CLASSIFICATION		2 PAGE		3 DATE		4 REPLACES PAGE(S)	
Simulated Laboratory				(U)		159.10		18 May 1966		DATED	
3. TEST PROGRAM TITLE				6. PROGRAM REQUIREMENT CODE		7. SYSTEM CODE		8. CONTRACTOR/CONTRACT NUMBER		9. SECURITY CLASSIFICATION	
TIII SLS/MOL-HSQ				3900				MC		(U)	
10. SUB SYSTEM/MAJOR COMPONENT				11. FUNCTIONAL CHARACTERISTICS				12. SYSTEM FUNCTIONAL BLOCK DIAGRAM			
1. Simulated Laboratory Structure				1. The Simulated Laboratory consists of a modified Titan II Stage I oxidizer tank with added for and aft skirts all designed to simulate general external configuration and mass structural characteristics of a potential MOL vehicle. The structure provides a platform upon which the experiments, power supplies, T/M equipment, data storage equipment and the command control system may be mounted. Environmental control is also provided by the enclosure.							
2. Experiments (12) a. Micrometeoroid Detector b. Heat Transfer Test Capsule c. Fuel Cell d. Bio-cell e. Zero-G Propellant Gauging f. Orbis-Low g. OV-1 h. OV-4 i. Protuberance j. Structural Panel k. Paint Pattern l. Corner Reflectors				2. Experiments - see individual form 159's.							

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1 SECURITY CLASSIFICATION (U) (U)

9. REVISION NO. 1

SYSTEM FUNCTIONAL DESCRIPTION			1. SECURITY CLASSIFICATION (U)		2. PAGE 159.10	
Simulated Laboratory (cont)			3. DATE 18 May 1966		4. REPLACES PAGE(S)	
5. TEST PROGRAM TITLE TIII SLS/MOL-HSQ			6. PROGRAM REQUIREMENT CODE 3900		7. SYSTEM CODE MC	
10. SUB SYSTEM/MAJOR COMPONENT			12. SYSTEM FUNCTIONAL BLOCK DIAGRAM			
11. FUNCTIONAL CHARACTERISTICS			3 and 4. T/M data links - boost and on-orbit.			
3. T/M data link - boost phase.			3. Boost phase T/M consists of the PCM and SSB transmitters.			
4. T/M data link - on-orbit.			4. On-orbit T/M consists of the 10 W transmitter with capability of switching to the SSB transmitter.			
5. Data storage - on-orbit.			5. On-orbit data storage is accomplished by using a two track tape recorder capable of storing 185 minutes of data. Ground control of record and reproduce modes is provided.			



SYSTEM FUNCTIONAL DESCRIPTION				1. SECURITY CLASSIFICATION		2. PAGE 159.12	
Simulated Laboratory (cont)				(U)		3. DATE 18 May 1966	
TIII SLS/MOL-HSQ				MC		4. REPLACES PAGE(S)	
5. TEST PROGRAM TITLE		6. PROGRAM REQUIREMENT CODE		7. SYSTEM CODE		8. DATED	
		3900					
10. SUB SYSTEM/MAJOR COMPONENT		11. FUNCTIONAL CHARACTERISTICS					
6. Power Supply		<p>6. Power supplies consists of three battery supplies, Simulated Laboratory Power Supply (SLPS), 25VDC orbital P.S. and HTTC P.S.</p> <p>7. Command Control System consists of two antennas and redundant receivers capable of providing 1 address and 14 tone pair commands</p>					
7. Command Control System		<p>12. SYSTEM FUNCTIONAL BLOCK DIAGRAM</p> <p>The diagram illustrates the system's functional blocks and their interconnections. At the top, 'Experiments On-Orbit' are connected to a 'Boost T/M' and a '25 VDC Orbital P.S.'. The 'Boost T/M' is powered by '2 - 60 A.H. batteries' and is connected to a 'HTTC P.S.'. The '25 VDC Orbital P.S.' is also powered by '2 - 60 A.H. batteries' and is connected to a 'Neg Bug'. Below these, the 'Command Control System' is shown, featuring two 'Antennas' connected to a 'Coupler'. The 'Coupler' is connected to two 'Receiver' blocks, each followed by a 'Decoder'. The 'Decoders' are connected to a 'Typical Command' output. The entire system is grounded to 'FRW-2 (Ground)'.</p>					



Heat Transfer Test Capsule (HTTC) SYSTEM FUNCTIONAL DESCRIPTION		1. SECURITY CLASSIFICATION (U)		2. PAGE 199.15	
5. TEST PROGRAM TITLE TIII SLS/MOL-HSQ		6. PROGRAM REQUIREMENT CODE 3900		3. DATE 18 May 1966	
10. SUB SYSTEM/MAJOR COMPONENT 11. FUNCTIONAL CHARACTERISTICS		7. SYSTEM CODE MC		4. REPLACES PAGE(S) DATED	
1. Pumps 2. Heaters 3. Radiators 4. 48 Transducers, Pressure, Temperature, and Acceleration. 5. Liquid Metal.		12. SYSTEM FUNCTIONAL BLOCK DIAGRAM <pre> graph TD HSQ_Power[HSQ Power] --> Transducers[48 Transducers Temperature Pressure Acceleration] HSQ_Power --> Radiator[Radiator] HSQ_Power --> Pumps[Pumps] HSQ_Power --> Heaters[Heaters] HSQ_Power --> Sequencer[Sequencer System] HSQ_Power --> Protective[Protective Firing] HSQ_Power --> Ordnance[Open Door Initiate Ordnance] HSQ_Power --> IGS[IGS Turn Off] HSQ_Power --> GroundPower[Ground Power] Radiator --> Pumps Radiator --> Heaters Radiator --> Sequencer Radiator --> Protective Radiator --> Ordnance Radiator --> IGS Radiator --> GroundPower Pumps --> Heaters Heaters --> Sequencer Sequencer --> Protective Protective --> Ordnance Ordnance --> IGS IGS --> GroundPower </pre>			

Note: Equipment shown in dotted blocks is not part of the experiment and is shown for clarity only.



Micrometeoroid Detector 5. TEST PROGRAM TITLE TIII SLS/MCL-HSQ		SYSTEM FUNCTIONAL DESCRIPTION 1. SECURITY CLASSIFICATION (U) 2. PAGE 159.14 3. DATE 18 May 1966 4. REPLACES PAGE(S) 8. CONTRACTOR/CONTRACT NUMBER MC DATED	
10. SUB SYSTEM/MAJOR COMPONENT TIII SLS/MCL-HSQ		11. FUNCTIONAL CHARACTERISTICS 1. Measure velocity, mass and charge of micrometeorites.	
1. Micrometeoroid detector, 2 packages		SYSTEM FUNCTIONAL BLOCK DIAGRAM <pre> graph TD HSQ_Power[HSQ Power] --> FVD[Forward Viewing Detector] HSQ_Power --> SVD[Side Viewing Detector] FVD --> HSQ_TM[HSQ T/M] SVD --> HSQ_TM HSQ_TM -- Reset --> FVD HSQ_TM -- Reset --> SVD HSQ_TM --> PC[Protective Cover] HSQ_TM --> PD[Protective Door] PC --> OSCO[Open Cover Initiate Ordnance] PD --> OIDO[Open Door Initiate Ordnance] OSCO -- Or --> SS[Sequence System] OIDO -- Or --> SS SS --> SOCVU1[SOCVU] SS --> SOCVU2[SOCVU] </pre>	
		Note: Equipment shown in dotted blocks is not part of the experiment and is shown for clarity only.	



SYSTEM FUNCTIONAL DESCRIPTION			1. SECURITY CLASSIFICATION	
3. TEST PROGRAM TITLE	6. PROGRAM REQUIREMENT CODE	7. SYSTEM CODE	2. PAGE 159.16	
Zero "G" Propellant Gauging			3. DATE 18 May 1966	
			4. REPLACES PAGE(S)	
			5. CONTRACTOR/CONTRACT NUMBER	
			6. DATED	
			7. MC	
			8. SYSTEM FUNCTIONAL BLOCK DIAGRAM	
10. SUB SYSTEM/MAJOR COMPONENT	11. FUNCTIONAL CHARACTERISTICS	12.		
1. Pressure Vessels (2)	1. One pressure vessel to contain the simulated propellant prior to starting the experiment. and one to receive simulated propellant during the experiment.	<pre> graph TD HSQ_T_M[HSQ T/M] --> Transducers_1[Transducers] HSQ_T_M --> Flowmeter[Flowmeter] HSQ_T_M --> Transducers_2[Transducers] HSQ_T_M --> Pressure_Vessel_1[Pressure Vessel] HSQ_T_M --> Pressure_Vessel_2[Pressure Vessel] Flowmeter --> Solenoid_Valve[Solenoid Valve] Solenoid_Valve --> Pressure_Vessel_1 Solenoid_Valve --> Pressure_Vessel_2 Solenoid_Valve --> Electronic_Package[Electronic Package] Electronic_Package --> Command_Control[Command Control] Electronic_Package --> Sequence_System[Sequence System] Electronic_Package --> ESQ_Power[ESQ Power] Command_Control --> Power_Transfer[Power Transfer] Power_Transfer --> Ground_Power[Ground Power] </pre>		
2. Flow meter	2. Flow meter to measure quantity of simulated propellant transferred to receiving vessel during experiment.			
3. Solenoid Valve	3. Solenoid valve to control flow of simulated propellant.			
4. Transducers (6)	4. Transducers to measure quantity of simulated propellant (2) pressure in vessels (2), and temperatures (2).			
5. Electronics Package	5. Electronic package for signal conditioning.			

Note: Equipment shown in dotted blocks are not part of the experiment.



SYSTEM FUNCTIONAL DESCRIPTION Bio Cell TIII SLS/MOL-HSQ		1. SECURITY CLASSIFICATION UNCLASSIFIED 2. DATE 18 May 1966 3. SPECIALS PRICING DATED	
5. TEST PROGRAM TITLE TIII SLS/MOL-HSQ		6. PROGRAM REQUIREMENT CODE 5900	
7. SYSTEM CODE 12.		8. CONTRACTOR/CONTRACT NUMBER MC	
10. SUB-SYSTEM/MAJOR COMPONENT 11. FUNCTIONAL CHARACTERISTICS 1. Light source shines through organisms and is detected by photocell.		SYSTEM FUNCTIONAL BLOCK DIAGRAM <pre> graph TD LS[Light Source] --> Org[Organisms] Org --> TT[Temperature Transducers] TT --> HSQ[HSQ T/M] HSQ --> Radio[Radio] Bat[Battery] --> LS Bat --> VT[Voltage Transducer] VT --> HSQ </pre>	
1. Light Source 2. Photocell 3. Organisms 4. Container 5. Transducers, Voltage, Temperatures 6. Battery		NOTE: Equipment shown in dotted blocks is not part of the experiment and is shown for clarity only.	
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Fuel Cell		SYSTEM FUNCTIONAL DESCRIPTION		1. SECURITY CLASSIFICATION (U)		2. PAGE 159.17	
SUB SYSTEM/MAJOR COMPONENT		TIII SLS/MOL-HSQ		3. DATE 18 May 1966		4. REPLACES PAGE(S)	
10. TEST PROGRAM TITLE		6. PROGRAM REQUIREMENT CODE 3900		7. SYSTEM CODE		DATED	
11. FUNCTIONAL CHARACTERISTICS		8. CONTRACTOR/CONTRACT NUMBER MC					
12. SYSTEM FUNCTIONAL BLOCK DIAGRAM		13. SECURITY CLASSIFICATION (U)					
1. K Bottles	1. Store high pressure, ambient temperature gaseous hydrogen and oxygen.						
2. Pressurization Pallet	2. Two identical pallets, one for H ₂ and one for O ₂ , contain start valves, filters, regulators, relief valves, check-out ports, and instrumentation. The pallet regulates gas pressure to the fuel cell under varying flow and inlet pressure conditions, and provides overpressure protection for the fuel cell. The operation of the fuel cell is started by firing the start valves after the orbit is attained.						
3. Fuel Cell	3. The experimenter supplied module converts H ₂ and O ₂ gas to water vapor, heat, and electrical energy. Regulators are provided for secondary gas regulation, and solenoid valves controlled by a timer in the fuel cell allow periodic purging of O ₂ and H ₂ gas.						
4. Vent Lines	4. Vent lines are routed from the relief valves and fuel cell purge ports to the vehicle skin and overboard. A vent line is routed from the fuel cell water vapor port to the vehicle skin and overboard such that the thrust vector is directed thru the vehicle C.G.						



Orbis Low		SYSTEM FUNCTIONAL DESCRIPTION		1. SECURITY CLASSIFICATION (U)		2. PAGE 122416	
3. TEST PROGRAM TITLE TIII SLS/MOL-HSQ		4. PROGRAM REQUIREMENT CODE 3900		5. SYSTEM CODE		6. DATE 18 May 1966	
7. SUB SYSTEM/MAJOR COMPONENT		8. CONTRACTOR/CONTRACT NUMBER MC		9. SECURITY CLASSIFICATION MC		10. DATED	
11. FUNCTIONAL CHARACTERISTICS		12. SYSTEM FUNCTIONAL BLOCK DIAGRAM					
1. Transmitter 2. 35 ft extendable antenna 3. Antenna extend ordnance 4. Transmission "On-Orbit" only.		1. The transmitter may be commanded on/off from ground control. Frequencies of transmission are 5.006, 10.004 and 30.012 MC. 2. Upon command from the sequence system, the antenna protective door will be opened. 3. The 35 foot antenna will be extended upon command from the sequence system. 4. Transmission "On-Orbit" only.					
		<pre> graph TD HSQPower[HSQ Power] --> Transmitter[Transmitter] Transmitter --> Antenna[35 ft. Extendable Antenna] Antenna --> OpenDoor[Open Door Initiate Ordnance] OpenDoor --> AntennaExtend[Antenna Extend Ordnance] AntennaExtend --> AdapterCable[Experiment Supplied Adapter Cable] AdapterCable --> SCCV[SCCV] Transmitter --> PowerON[Power ON/OFF from Simulated Lab. Command Control System] PowerON --> Radio[Radio] Radio --> SOCVU[SOCVU] SOCVU --> SequenceSystem[Sequence System] Antenna --> SequenceSystem OpenDoor --> SequenceSystem </pre>					
		Note: Equipment shown in dotted blocks is not part of the experiment and is shown for clarity only.					

SYSTEM FUNCTIONAL DESCRIPTION				1. SECURITY CLASSIFICATION (U)	2. PAGE 159.19
5. TEST PROGRAM TITLE TIII SLS/MOL-HSQ				6. PROGRAM REQUIREMENT CODE 3900	7. SYSTEM CODE
10. SUB SYSTEM/MAJOR COMPONENT				8. CONTRACT/CONTRACT NUMBER MC	9. REPLACES PAGE(S)
11. FUNCTIONAL CHARACTERISTICS				12. SYSTEM FUNCTIONAL BLOCK DIAGRAM	
1. Structural Panel 2. Transducers, static pressure, low frequency accelerometers temperature, and strain gauge.				<pre> graph LR Panel[Panel] --> Transducers[Transducers] Transducers --> HSQT_M[HSQ T/M] HSQPower[HSQ Power] --> Transducers </pre>	
Note: Equipment shown in dotted block is not part of the experiment and is shown for clarity only.				13.	



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1. SECURITY CLASSIFICATION

(U)

2. REVISION NO.

1

Corner Reflectors		SYSTEM FUNCTIONAL DESCRIPTION		1. SECURITY CLASSIFICATION (U)		2. PAGE 159 2C	
5. TEST PROGRAM TITLE TIII SL3/MCL-HSQ		6. PROGRAM REQUIREMENT CODE 390		7. SYSTEM CODE		3. DATE 18 May 1968	
10. SUB SYSTEM/MAJOR COMPONENT		11. FUNCTIONAL CHARACTERISTICS		8. CONTRACTOR/CONTRACT NUMBER MC		4. REPLACES PAULIS	
				12. SYSTEM FUNCTIONAL BLOCK DIAGRAM		DA LO	
1. 18 corner reflectors		1. Passive reflectors to provide laser ranging targets.		N/A			



Resolution Pattern				SYSTEM FUNCTIONAL DESCRIPTION		1. SECURITY CLASSIFICATION		2. PAGE	
5. TEST PROGRAM TITLE		6. PROGRAM REQUIREMENT CODE		7. SYSTEM CODE		8. CONTRACTOR/CONTRACT NUMBER		3. DATE	
TII SLS/MOL-HSQ		3900		3900		MC		159.21	
10. SUB SYSTEM/MAJOR COMPONENT		11. FUNCTIONAL CHARACTERISTICS		12. SYSTEM FUNCTIONAL BLOCK DIAGRAM		4. REPLACES PAGE(S)		DATED	
1. Black and white paint pattern		1. Pattern of black and white paint having special optic and thermal properties applied to outside of simulated laboratory.		N/A				18 May 1966	



SYSTEM FUNCTIONAL DESCRIPTION		1. SECURITY CLASSIFICATION (U)		2. PAGE 159.23	
3. TEST PROGRAM TITLE TII SLS/MOL-HSQ		4. PROGRAM REQUIREMENT CODE 3900		5. DATE 18 May 1966	
6. PROGRAM REQUIREMENT CODE 3900		7. SYSTEM CODE MC		8. REPLACES PAGE(S)	
9. SUB SYSTEM/MAJOR COMPONENT TII SLS/MOL-HSQ		10. FUNCTIONAL CHARACTERISTICS 1. Transducers determine effect during powered flight of aero heating on unprotected nozzle. 2. One aerodynamic fairing. 3. Temperature transducers.		11. SYSTEM FUNCTIONAL BLOCK DIAGRAM <pre> graph LR ACN[Attitude Control Nozzle] --> T1[Transducers] T1 --> HSQ_Power[HSQ Power] HSQ_Power --> T2[Transducers] T2 --> AF[Aerodynamic Fairing] HSQ_Power --> HSQ_T_M[HSQ T/M] HSQ_T_M --> radio[radio] </pre>	
12.		13.		14.	



OV-1		SYSTEM FUNCTIONAL DESCRIPTION		1. SECURITY CLASSIFICATION		2. PAGE 159.28	
SUB SYSTEM/MAJOR COMPONENT		TIII SLS/MOL-HSQ		(U)		3. DATE 18 May 1966	
10. PROGRAM REQUIREMENT CODE		3900		4. CONTRACTOR/CONTRACT NUMBER		5. REPLACES PAGE(S)	
11. FUNCTIONAL CHARACTERISTICS		7. SYSTEM CODE		MC		DATED	
1. Standard Container for multiple experiments.		12. SYSTEM FUNCTIONAL BLOCK DIAGRAM					
<p>1. The standard container contains individual experiments which will be ejected by OV-1 subsequent to its ejection from the simulated laboratory. Individual experiment ejection is accomplished by ordnance firing from an OV-1 bus which is armed subsequent to its ejection from the simulated laboratory.</p>							
		<p>Note: Equipment shown in dotted blocks is not part of the experiment and is shown for clarity only.</p>					




SYSTEM FUNCTIONAL DESCRIPTION		1. SECURITY CLASSIFICATION (U)		2. PAGE 159.24	
3. TEST PROGRAM TITLE TIII SLS/MOL-HSQ		4. PROGRAM REQUIREMENT CODE 3900		5. DATE 13 NOV 1966	
6. SUB SYSTEM/MAJOR COMPONENT		7. SYSTEM CODE		8. CONTRACTOR/CONTRACT NUMBER 11C	
10.		11.		9. REVISION NO. 1	
1. Transmitter Satellite		FUNCTIONAL CHARACTERISTICS			
1. The transmitter satellite is ejected first by firing the eject ordnance which in turn ignites an eject rocket. Approximately fifteen seconds later the receiver satellite is ejected by igniting the eject ordnance. Tracking beacons in each satellite will transmit on 258.5 MC. Status information for each satellite will be transmitted on 250.9 MC. The transmitter will transmit on 20.75, 44.5, and 46.8 MC. Receiver data will be transmitted to the ground on 249.9, 255.1 and 245.3 MC. Transmission "On-Orbit" only.		SYSTEM FUNCTIONAL BLOCK DIAGRAM			
<pre> graph TD subgraph Transmitter TSM[Transmitter Status T/M Beacon] ER[Eject Rocket] EO1[Eject Ordnance] SS1[Sequence System] TSM --> ER ER --> EO1 EO1 --> SS1 end subgraph Receiver RSM[Receiver Status T/M Data T/M Beacon] EO2[Eject Ordnance] SS2[Sequence System] RSM --> EO2 EO2 --> SS2 end SS1 -.-> SS2 </pre>		Note: Equipment shown in dotted blocks is not part of the experiment and is shown for clarity only.			



RANGE USERS' INSTRUMENTATION (SURFACE/AIR/OTHERS)				1. SECURITY CLASSIFICATION		2. PAGE 160.4	
5. TEST PROGRAM		6. PROGRAM REQUIREMENT NO.		7. SYSTEM CODE		3. DATE	
TIII SLs/MOL-HSq		5900				4. ACES PAGE(S)	
12. BRIEF DESCRIPTION OF ALL RANGE USER'S ELECTRONIC, OPTICAL AND OTHER GROUND INSTRUMENTATION EQUIPMENT TO BE USED DURING THE TEST PROGRAM				8. CONTRACTOR		9. DATE	
10. ITEM NO.	11. TEST CODE	Type	Qty.	Location	Purpose/Function		
1	HSQ ZH	FAM/FM Ground Station EMR SK808DQ1408	1	Control Center	Data Playback and Checkout of Orbital T/M		
2	HSQ ZH	FM Signal Generator RS Electronics Model 1021	1	Portable (Stored T/M Van)	Checkout of Command Receivers		
3	HSQ ZH	Control Box	1	Portable (Stored T/M Van)	Checkout and Trouble-shooting of Instrumentation and Electrical Equipment.		

AFMTC FORM 315 JUN 61

PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.



1. SECURITY CLASSIFICATION (U)

2. REVISION NO. MT

Sim Lab		INSTRUMENTATION - TRANSMITTERS (SURFACE/AIR/OTHER)		1. SECURITY CLASSIFICATION		2. PAGE 161	
5. PROGRAM TITLE		6. PROGRAM REQUIREMENT CODE		7. SYSTEM CODE		3. DATE 18 May 1961	
TIII SLS/MOL-HSQ		3900				4. REPLACES PAGE(S)	
8. CONTRACTOR		MC		DATED			
10. TRANSMITTER CHARACTERISTICS		11. ANTENNA CHARACTERISTICS		12. PURPOSE AND REMARKS			
A. LOCATION: ITL Instr Van		A. LOCATION: None:Coax		Transmit MOL-HSQ closed loop PCM, SSB, and PAM/FM Video Signals via GIE Van at 600 KC from Vib Cell or Launch Pads to Control Center.			
B. TYPE: PCM/FM, SSB/FM, PAM/FM		B. TYPE:					
C. MODEL:		C. MODEL:					
D. MANUFACTURER:		D. MANUFACTURER:					
E. NUMBER OF EQUIPMENTS: ITL-5/Van		E. FREQUENCY RANGE: MC					
F. TYPE OF SERVICE:		F. FREQUENCY RANGE: MC					
G. FREQUENCY RANGE: MC		G. FREQUENCY RANGE: MC					
H. TUNABLE <input checked="" type="checkbox"/> FIXED TUNED		H. TUNABLE <input type="checkbox"/> FIXED TUNED					
I. METHOD OF FREQUENCY CONTROL: Deviation of a VCO (600 KC)		I. MAIN LOBE BEAMWIDTH IN DEGREES AT 3DB					
J. BANDWIDTH AT 3DB: MC		J. RATE OF ROTATION - INDICATE IF FIXED					
K. EMISSION: <input type="checkbox"/> AM, <input checked="" type="checkbox"/> FM, <input type="checkbox"/> PULSE, <input type="checkbox"/> COMPOSITE NONSTANDARD		K. IS THERE AVAILABLE A SPECTRUM RESPONSE REPORT ON THIS ANTENNA? <input type="checkbox"/> YES <input type="checkbox"/> NO					
L. FREQUENCY STABILITY: N/A		L. FREQUENCY STABILITY: N/A					
M. AVERAGE POWER: N/A WATTS		M. AVERAGE POWER: N/A WATTS					
N. PEAK PULSE POWER: N/A WATTS		N. PEAK PULSE POWER: N/A WATTS					
O. MAXIMUM PRF: N/A PPS		O. MAXIMUM PRF: N/A PPS					
P. PULSE WIDTHS: N/A US, US, AT 30B POINTS.		P. PULSE WIDTHS: N/A US, US, AT 30B POINTS.					
Q. HARMONIC SUPPRESSION: 2ND N/A DB, 3RD DB, 4TH DB		Q. HARMONIC SUPPRESSION: 2ND N/A DB, 3RD DB, 4TH DB					
R. CODING AND/OR MODULATION: PCM, SSB PAM/FM		R. CODING AND/OR MODULATION: PCM, SSB PAM/FM					
S. ARE THERE AVAILABLE SPECTRUM ANALYSIS REPORTS ON THIS TRANSMITTER: <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		S. ARE THERE AVAILABLE SPECTRUM ANALYSIS REPORTS ON THIS TRANSMITTER: <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO					
NOTE: TRANSMITTING SYSTEMS WHICH REQUIRE EXTENSIVE PERIODS OF RF CHECKOUT TIME WILL BE REQUIRED TO BE EQUIPPED WITH A CLOSED LOOP OR NON-RADIATING CHECKOUT DEVICE.		NOTE: TRANSMITTING SYSTEMS WHICH REQUIRE EXTENSIVE PERIODS OF RF CHECKOUT TIME WILL BE REQUIRED TO BE EQUIPPED WITH A CLOSED LOOP OR NON-RADIATING CHECKOUT DEVICE.					

OV-4		INSTRUMENTATION - TRANSMITTERS (SURFACE/AIR/OTHER)		1. SECURITY CLASSIFICATION		2. PAGE 161-1			
PROGRAM TITLE		PROGRAM IDENTIFICATION CODE		3. DATE 18 May 1966		4. REPLACES PAGE(S)			
TIII SLS/MOL-HSQ		3900		(U)		DATED			
5. CONTRACTOR		6. SYSTEM CODE		7. SECURITY CLASSIFICATION		8. REVISION NO.			
MC						1			
10. TRANSMITTER CHARACTERISTICS		11. ANTENNA CHARACTERISTICS		12. PURPOSE AND REMARKS		TEST CODE: S X			
<p>A. LOCATION: (OV4-1T) Transmitter Satellite</p> <p>B. TYPE: NYA</p> <p>C. MODEL: NYA</p> <p>D. MANUFACTURER: TRW</p> <p>E. NUMBER OF EQUIPMENTS: 3</p> <p><input type="checkbox"/> FIXED <input checked="" type="checkbox"/> ORBITAL</p> <p>F. TYPE OF SERVICE: <input type="checkbox"/> GND/GND, <input type="checkbox"/> GND/AIR, <input checked="" type="checkbox"/> OTHER.</p> <p>G. FREQUENCY RANGE: NYA</p> <p>H. <input type="checkbox"/> TUNABLE <input checked="" type="checkbox"/> FIXED TUNED</p> <p>I. METHOD OF FREQUENCY CONTROL: Crystal</p> <p>J. BANDWIDTH AT 30B: See Remarks</p> <p>K. EMISSION: <input type="checkbox"/> AM, <input type="checkbox"/> FM, <input type="checkbox"/> PULSE, <input checked="" type="checkbox"/> COMPOSITE NONSTANDARD</p> <p>L. FREQUENCY STABILITY: 0.0001%</p> <p>M. AVERAGE POWER: 1 WATTS</p> <p>N. PEAK PULSE POWER: 1,000 WATTS</p> <p>O. MAXIMUM PRF: 1,000 PPS</p> <p>P. PULSE WIDTHS: 1000 US, 100 US, 20 US AT 30B POINTS.</p> <p>Q. HARMONIC SUPPRESSION: 2ND 3RD DB, 4TH DB.</p> <p>R. CODING AND/OR MODULATION:</p> <p>S. ARE THERE AVAILABLE SPECTRUM ANALYSIS REPORTS ON THIS TRANSMITTER: <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO (IF YES, PROVIDE ONE COPY)</p> <p>NOTE: TRANSMITTING SYSTEMS WHICH REQUIRE EXTENSIVE PERIODS OF RF CHECKOUT TIME WILL BE REQUIRED TO BE EQUIPPED WITH A CLOSED LOOP OR NON-RADIATING CHECKOUT DEVICE.</p>		<p>A. LOCATION: NYA</p> <p>B. TYPE: V shaped Dipole See Remarks</p> <p>C. MODEL: NYA</p> <p>D. MANUFACTURER: De Havilland</p> <p>E. FREQUENCY RANGE: MC</p> <p>F. <input type="checkbox"/> TUNABLE <input type="checkbox"/> FIXED TUNED</p> <p>G. PREDOMINANT POLARIZATION: (CHECK ONLY ONE) <input type="checkbox"/> VERTICAL <input checked="" type="checkbox"/> HORIZONTAL</p> <p>H. CIRCULAR: SENSE: <input type="checkbox"/> LH <input type="checkbox"/> RH</p> <p>I. OTHER: <input type="checkbox"/></p> <p>J. MAXIMUM GAIN IN DB WITH RESPECT TO ISOTROPIC: 2 DB</p> <p>K. MAIN LOBE BEAMWIDTH IN DEGREES AT 30B POINTS: ELEVATION AZIMUTH:</p> <p>L. RATE OF ROTATION - INDICATE IF FIXED NYA RPM, <input type="checkbox"/> FIXED</p> <p>M. IS THERE AVAILABLE A SPECTRUM RESPONSE REPORT ON THIS ANTENNA? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO (IF YES, PROVIDE ONE COPY)</p> <p>N. A single V shaped De Havilland type dipole antenna (included angle of 90°) is used to transmit @ 20.75 mc. The 46.80 mc and 34.30 mc transmitters employ a V shaped dipole as a common antenna with suitable isolation provided.</p>		<p>Code Gen.</p> <p>XMTR 20.75MC</p> <p>Match Netwk.</p> <p>XMTR 34.30MC</p> <p>Match Netwk.</p> <p>XMTR 46.80MC</p> <p>Match Netwk.</p> <p>Diplex</p> <p>Coax. Switches</p> <p>Power Switches</p> <p>Command Decoder</p>		<p>T/M utilized on-orbit only. There are three experiment transmitters in the OV4-1T S/C that operate at the experimental spot frequencies noted above. The transmitter waveforms will contain 1 millisecond to 20 microsecond pseudo random pulses and have a bandwidth of 250 KC. An on board code generator provides this pseudo code used sequentially</p>			



OV-4 (CONT)		INSTRUMENTATION - TRANSMITTERS (SURFACE/AIR/OTHER)		1. SECURITY CLASSIFICATION		2. PAGE 161.2	
PROGRAM TITLE		TIII SLS/MOL-HSQ (continued)		(U)		3. DATE 18 May 1966	
PROGRAM NUMBER		3900		CONTRACTOR MC		4. REPLACES PAGE(S)	
5. DATED		6. SYSTEM CODE		7. TEST CODE: S X		8. REVISION NO.	
10. TRANSMITTER CHARACTERISTICS		11. ANTENNA CHARACTERISTICS		12. PURPOSE AND REMARKS		9. REVISION NO.	
<p>A. LOCATION:</p> <p>B. TYPE:</p> <p>C. MODEL:</p> <p>D. MANUFACTURER:</p> <p>E. NUMBER OF EQUIPMENTS:</p> <p><input type="checkbox"/> FIXED</p> <p><input type="checkbox"/> MOBILE</p> <p>F. TYPE OF SERVICE:</p> <p><input type="checkbox"/> GND/GND, <input type="checkbox"/> GND/AIR, <input type="checkbox"/> OTHER.</p> <p>G. FREQUENCY RANGE:</p> <p><input type="checkbox"/> TUNABLE <input type="checkbox"/> FIXED TUNED</p> <p>H. METHOD OF FREQUENCY CONTROL:</p> <p>I. BANDWIDTH AT 300:</p> <p>AND AT 6000:</p> <p>K. EMISSION: <input type="checkbox"/> AM, <input type="checkbox"/> FM, <input type="checkbox"/> PULSE,</p> <p><input type="checkbox"/> COMPOSITE NONSTANDARD</p> <p>L. FREQUENCY STABILITY: 1</p> <p>M. AVERAGE POWER:</p> <p>N. PEAK PULSE POWER:</p> <p>O. MAXIMUM PRF:</p> <p>P. PULSE WIDTHS:</p> <p>AT 300 POINTS:</p> <p>Q. HARMONIC SUPPRESSION: 2ND</p> <p>3RD</p> <p>R. CODING AND/OR MODULATIONS:</p> <p>S. ARE THERE AVAILABLE SPECTRUM ANALYSIS</p> <p>REPORTS ON THIS TRANSMITTER: <input type="checkbox"/> YES <input type="checkbox"/> NO</p> <p>(IF YES, PROVIDE ONE COPY)</p> <p>NOTE: TRANSMITTING SYSTEMS WHICH REQUIRE EXTENSIVE PERIODS OF RF CHECKOUT TIME WILL BE REQUIRED TO BE EQUIPPED WITH A CLOSED LOOP OR NON-RADIATING CHECKOUT DEVICE.</p>		<p>A. LOCATION:</p> <p>B. TYPE:</p> <p>C. MODEL:</p> <p>D. MANUFACTURER:</p> <p>E. FREQUENCY RANGE:</p> <p><input type="checkbox"/> TUNABLE <input type="checkbox"/> FIXED TUNED</p> <p>G. PREDOMINANT POLARIZATION: (CHECK ONLY ONE)</p> <p><input type="checkbox"/> VERTICAL</p> <p><input type="checkbox"/> HORIZONTAL</p> <p><input type="checkbox"/> CIRCULAR: SENSE: <input type="checkbox"/> LM <input type="checkbox"/> RM</p> <p><input type="checkbox"/> OTHER</p> <p>H. MAXIMUM GAIN IN DB WITH RESPECT TO ISOTROPIC:</p> <p>I. MAIN LOBE BEAMWIDTH IN DEGREES AT 300</p> <p>POINTS: ELEVATION</p> <p>AZIMUTH</p> <p>J. RATE OF ROTATION - INDICATE IF FIXED</p> <p>RPM, <input type="checkbox"/> FIXED</p> <p>K. IS THERE AVAILABLE A SPECTRUM RESPONSE</p> <p>REPORT ON THIS ANTENNA? <input type="checkbox"/> YES <input type="checkbox"/> NO</p> <p>(IF YES, PROVIDE ONE COPY)</p>		<p>to modulate one transmitter at a time. Each transmitter is modulated in turn over an interval of 11.2 sec. and is then silent for 22.4 sec.. Ground commands implemented thru the command decoder control the radiated power. Four operating levels are provided from zero to 1,000 watts peak (0/10/100/1,000 watts).</p>			



ORBIS-LOW		INSTRUMENTATION - TRANSMITTERS (SURFACE/AIR/OTHER)		1. SECURITY CLASSIFICATION		2. PAGE 161.3	
3. PROGRAM TITLE		7. SYSTEM CODE		3. DATE 18 May 1966		4. REPLACES PAGE(S)	
TIII SLS/MOL-HSQ		3900		8. CONTRACTOR MC		DATED	
10. TRANSMITTER CHARACTERISTICS		11. ANTENNA CHARACTERISTICS		12. PURPOSE AND REMARKS			
A. LOCATION: At Stage 108.116.		A. LOCATION: At Sta 108.116		Operated On-Orbit only.			
B. TYPE: AT-1		B. TYPE: AAS1					
C. MODEL: AT-1		C. MODEL: AAS1					
D. MANUFACTURER: ARF Products		D. MANUFACTURER: ARF. Products					
E. NUMBER OF EQUIPMENTS:		E. FREQUENCY RANGE: 5, 10, 30 MC					
<input checked="" type="checkbox"/> FIXED		<input checked="" type="checkbox"/> TUNABLE <input type="checkbox"/> FIXED TUNED					
<input type="checkbox"/> MOBILE		<input type="checkbox"/> TUNABLE <input type="checkbox"/> FIXED TUNED					
F. TYPE OF SERVICE:		G. PREDOMINANT POLARIZATION: (CHECK ONLY ONE)					
<input type="checkbox"/> GND/GND, <input checked="" type="checkbox"/> GND/AIR, <input type="checkbox"/> OTHER.		<input type="checkbox"/> VERTICAL					
<input type="checkbox"/> HORIZONTAL		<input type="checkbox"/> CIRCULAR: SENSE: <input type="checkbox"/> LM <input type="checkbox"/> RH					
G. FREQUENCY RANGE: 5.006, 10.004, 30.012 MC		H. MAXIMUM GAIN IN DB WITH RESPECT TO ISOTROPIC: 6 DB					
H. <input type="checkbox"/> TUNABLE <input checked="" type="checkbox"/> FIXED TUNED		I. MAIN LOBE BEAMWIDTH IN DEGREES AT 3DB POINTS: ELEVATION 100° AZIMUTH 140°					
I. METHOD OF FREQUENCY CONTROL:		J. RATE OF ROTATION - INDICATE IF FIXED RPM, <input checked="" type="checkbox"/> FIXED					
Crystal		K. IS THERE AVAILABLE A SPECTRUM RESPONSE REPORT ON THIS ANTENNA? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO					
J. BANDWIDTH AT 3DB: ± 200 cps MC.		IF YES, PROVIDE ONE COPY					
AND AT 60DB: ± 200 cps MC							
K. EMISSION: <input checked="" type="checkbox"/> AM, <input type="checkbox"/> FM, <input type="checkbox"/> PULSE.							
<input type="checkbox"/> COMPOSITE NONSTANDARD							
L. FREQUENCY STABILITY: ± .005% MC							
M. AVERAGE POWER: 14 WATTS							
N. PEAK PULSE POWER: WATTS							
O. MAXIMUM PRF: PPS							
P. PULSE WIDTHS: US, US, US							
AT 3DB POINTS.							
Q. HARMONIC SUPPRESSION: 2ND DB, DB.							
3RD DB, 4TH DB.							
R. CODING AND/OR MODULATION:							
S. ARE THERE AVAILABLE SPECTRUM ANALYSIS REPORTS ON THIS TRANSMITTER: <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO (IF YES, PROVIDE ONE COPY)							
NOTE: TRANSMITTING SYSTEMS WHICH REQUIRE EXTENSIVE PERIODS OF RF CHECKOUT TIME WILL BE REQUIRED TO BE EQUIPPED WITH A CLOSED LOOP OR NON-RADIATING CHECKOUT DEVICE.							



07-1		INSTRUMENTATION - RECEIVERS (SURFACE/AIR/OTHERS)		UNCLASSIFIED		162.1	
PROGRAM TITLE		THII SLS/MOL-HSQ		CONTRACTOR (GD/C)		DATE	
PROGRAM NUMBER		390C		MC		18 May 1966	
RECEIVER CHARACTERISTICS		ANTENNA CHARACTERISTICS		PURPOSE AND REMARKS		TEST CODE	
<p>A. LOCATION: 071-6 Test Equipment</p> <p>B. TYPE: Telemetry</p> <p>C. MODEL: R-1037A</p> <p>D. MANUFACTURER: Vitro Electronics</p> <p>E. NO. OF EQUIPMENTS - FIXED OR MOBILE: Mobile</p> <p>F. RECEIVING FREQ. TOLERANCES IN PERCENTAGE: 0.005%</p> <p>G. METHOD OF RECEIVER FREQ. CONTROL: Xtal or manually tuneable</p> <p>H. INTERMEDIATE FREQ: 50 MC & 10 MC</p> <p>I. RECV. SELECTIVITY IN DB-3DB: 20DB & 60DB</p> <p>J. RECV. SENSITIVITY: 2.0 microvolts DBM</p> <p>K. LOCAL OSCILLATOR FREQUENCY (ABOVE OR BELOW): 43.855 X 6</p> <p>L. SPURIOUS RESPONSE REJECTION: 60 DB</p> <p>M. CODED AND/OR MODULATION: MF DC to 250 KC</p> <p>N. ARE THERE AVAILABLE SPECTRUM ANALYSIS REPORTS ON THIS RECEIVER? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO</p> <p>IF YES, PROVIDE 2 COPIES TO MTRCP</p>		<p>A. LOCATION: NONE</p> <p>B. TYPE: NONE</p> <p>C. MODEL: NONE</p> <p>D. MANUFACTURER: NONE</p> <p>E. DIRECTIVITY AND BEAMWIDTH IN AZIMUTH & ELEVATION - IF POWER: NONE</p> <p>F. RATE OF ROTATION, INDICATE IF FIXED: NONE</p> <p>G. FREQ. RANGE OF ANTENNA: NONE</p> <p>H. POLARIZATION: NONE</p> <p>I. IS THERE AVAILABLE A SPECTRUM ANALYSIS REPORT ON THIS ANTENNA? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO</p> <p>J. ANTENNA GAIN AT USING FREQUENCY: NONE</p>		<p>1. SECURITY CLASSIFICATION</p> <p>2. SECURITY CLASSIFICATION</p> <p>3. SECURITY CLASSIFICATION</p> <p>4. SECURITY CLASSIFICATION</p> <p>5. SECURITY CLASSIFICATION</p> <p>6. SECURITY CLASSIFICATION</p> <p>7. SECURITY CLASSIFICATION</p> <p>8. SECURITY CLASSIFICATION</p> <p>9. SECURITY CLASSIFICATION</p> <p>10. SECURITY CLASSIFICATION</p> <p>11. SECURITY CLASSIFICATION</p> <p>12. SECURITY CLASSIFICATION</p>		<p>1. SECURITY CLASSIFICATION</p> <p>2. SECURITY CLASSIFICATION</p> <p>3. SECURITY CLASSIFICATION</p> <p>4. SECURITY CLASSIFICATION</p> <p>5. SECURITY CLASSIFICATION</p> <p>6. SECURITY CLASSIFICATION</p> <p>7. SECURITY CLASSIFICATION</p> <p>8. SECURITY CLASSIFICATION</p> <p>9. SECURITY CLASSIFICATION</p> <p>10. SECURITY CLASSIFICATION</p> <p>11. SECURITY CLASSIFICATION</p> <p>12. SECURITY CLASSIFICATION</p>	



OV-4		INSTRUMENTATION - RECEIVERS (SURFACE/AIR/OTHERS)		1. SECURITY CLASSIFICATION (U)		2. PAGE 162-3	
TIII SLS/MOL-HSQ		6. PROGRAM REQUIREMENT CODE 3900		9. CONTRACTOR MC		3. DATE 18 May 1966	
10. RECEIVER CHARACTERISTICS		11. ANTENNA CHARACTERISTICS		12. PURPOSE AND REMARKS		4. REPLACES PART(S) DATED TEST CODE	
<p>A. LOCATION: OV4-1R Receiver Satellite</p> <p>B. TYPE: NYA</p> <p>C. MODEL: NYA</p> <p>D. MANUFACTURER: RHG Electronics Inc</p> <p>E. NO. OF EQUIPMENTS: 3 Orbital</p> <p>F. RECEIVING FREQ. TOLERANCES IN PERCENTAGE: .005%</p> <p>G. METHOD OF RECEIVER FREQ. CONTROL: Crystal</p> <p>H. INTERMEDIATE FREQ. 125KC</p> <p>I. RCVR. SELECTIVITY IN DB-300, 2000 & 6000</p> <p>J. RCVR. SENSITIVITY: DBM</p> <p>K. LOCAL OSCILLATOR FREQUENCY (ABOVE OR BELOW): 70 DB</p> <p>L. SPURIOUS RESPONSE REJECTION: AM-Pulsed</p> <p>M. CODED AND/OR MODULATION: AM-Pulsed</p> <p>N. ARE THERE AVAILABLE SPECTRUM ANALYSIS REPORTS ON THIS RECEIVER? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO IF YES, PROVIDE 2 COPIES TO MTRCF</p>		<p>A. LOCATION: NYA</p> <p>B. TYPE: V-shaped Dipole</p> <p>C. MODEL: NYA</p> <p>D. MANUFACTURER: De Havilland</p> <p>E. DIRECTIVITY AND BEAMWIDTH IN AZIMUTH & ELEVATION: 1 POWER</p> <p>F. RATE OF ROTATION, INDICATE IF FIXED: Fixed</p> <p>G. FREQ. RANGE OF ANTENNA: Fixed tuned</p> <p>H. POLARIZATION: Horizontal</p> <p>I. IS THERE AVAILABLE A SPECTRUM ANALYSIS REPORT ON THIS ANTENNA? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO</p> <p>J. ANTENNA GAIN AT USING FREQUENCY: 2db</p> <p>See Remarks for antenna use</p>		<p>There are three experiment receivers in the OV4-1R S/C that compliment the experiment transmitters, contained in the OV4-1R S/C. When the receiver satellite is interrogated by a ground station, the decoder automatically activates these receivers and the wide band TLM associated with them. The experiment receivers do not contain 2nd detectors and their IF strip output is used to directly FM modulate the wide band TLM.</p> <p>In case of failure in the wide band TLM links, it is possible to interchange TLM channels-experiment receiver assignment by ground command. T/M utilized on-orbit only.</p>		<p>Diagram showing three receivers (20.75 MC, 34.30 MC, 46.80 MC) connected to a Command Decoder and a Diplex. Each receiver is connected to a Matching Netwk. The outputs of the Matching Netwks are connected to the Diplex. The Diplex is connected to the Command Decoder. The outputs of the receivers are also connected to a 'To Wideband T/M' line.</p>	
13. RECEIVER CHARACTERISTICS		14. ANTENNA CHARACTERISTICS		15. PURPOSE AND REMARKS		16. TEST CODE	
				S X			

OCCUPATIONAL HAZARDS - MEDICAL				1. SECURITY CLASSIFICATION	2. PAGE	170
5. PROGRAM TITLE				3. DATE	18 May 1966	4. REPLACES PAGE(S)
TIII SLS/MOL-HSQ				8. CONTRACTOR	DATED	
10. ITEM NO.	11. TEST CODE	12. REPORT NAME	13.	14. DATE REPORT WILL BE SUPPLIED		
1.	HSQ	* <u>PROPELLANTS AND OTHER TOXIC OR HAZARDOUS MATERIALS.</u> a. Chemical and Physical Properties. b. Toxicity - Acute and Chronic. c. Recommended First Aid and Treatment.		90 Day prior to Launch		
2.	HSQ	* <u>RADIATION HAZARDS.</u> a. Ionizing. b. Radio Frequency.				
3.	HSQ	* <u>ACOUSTIC HAZARDS.</u>				
4.	HSQ	* <u>BLAST PARAMETERS FOR .4 PSI AND .65 PSI.</u> a. TNT Equivalent. b. Hazard Radii.				
5.	HSQ	* <u>PROTECTIVE EQUIPMENT NEEDED.</u>				
6.	HSQ	<u>HUMAN FACTORS ANALYSIS.</u>				
* <i>Mandatory Report</i>						

AFMTC FORM 31W JUL 63	PREVIOUS EDITION OF THIS FORM IS OBSOLETE.	1. SECURITY CLASSIFICATION	9. REVISION NO.
		(U)	1




SUMMARY OF FREQUENCY UTILIZATION										1. SECURITY CLASSIFICATION		2. PAGE 190	
										(U)		3. DATE 18 May 1966	
										8. CONTRACTOR MC, MAC		4. REPLACES PAGE(S)	
										7. SYSTEM CODE		DATED	
5. PROGRAM TITLE TIII SLS/MOL-HSQ										6. PROGRAM REQUIREMENT CODE 3900			
10. ITEM NO.	11. TEST CODE	12. FREQUENCY	13. EMISSION CHARACTERISTICS	14. PURPOSE	PROTECTION REQUIRED	15. EST. TIME OF USAGE		17. SPECIAL MONITORING REQUESTS					
						PRE-OP.	LAUNCH						
1	HSQ	236.2	PCM/FM	Airframe Telemetry (lab)	+ 500 KC of C.F.	2:00	30 Min.						
2	HSQ	231.9	SSB/FM	Acoustic and Vibration Data (Lab)	+ 500 KC of C.F.	2:00	30 Min.						
3	HSQ	259.7 MC	PCM/FM	Real Time Gemini TLM	+ 500 KC of C.F.	20 hr	1.5 hr						
4	HSQ	5765/5690 MC	Pulse Radar 1000 watt max PRF 2000 PFS	C-Band Beacon (Gemini)	normal	---	----						
5	HSQ	243.0 MC	243.0 Pulse/CW 50 Watts Peak	Recovery Beacon (Gemini)	+24.3 kc of C.F.	2 hr	2 hr	This time is estimated and may be longer depending on recovery circumstances. Transmission will occur only in down range impact area.					
6	HSQ ZX	236.2 MC	PAM/FM	Orbital T/M Data	+ 500 KC of C.F.	2:00	6 hrs	See pg. 230					
7	HSQ ZX	231.9 MC	PAM/FM	Orbital T/M Data	+ 500 KC of C.F.	2:00	6 hrs	See pg. 230					
8	HSQ VX	5.006 MC	*	ORBIS-Low On-Orbit ionospheric sounding	*	0	10 days	Items 8-10 turned on by ground command, NO monitoring required					
9	HSQ VX	10.004 MC	*		*								
10	HSQ VX	30.012 MC	*		*								
11	HSQ SX	230.9 MC	*	OV-4(T) status T/M	*								
12	HSQ SX	230.9 MC	*	OV-4(R) status T/M	*			* (to be supplied)					



SUMMARY OF FREQUENCY UTILIZATION										1. SECURITY CLASSIFICATION		2. PAGE 190.1	
										(U)		3. DATE 18 May 1966	
										MC/MAC		4. REPLACES PAGE(S)	
5. PROGRAM TITLE TIII SLS/MOL-HSQ										6. PROGRAM REQUIREMENT CODE 3900		7. SYSTEM CODE	
										8. CONTRACTOR		DATED	
10. ITEM NO.	11. TEST CODE	12. FREQUENCY	13. EMISSION CHARACTERISTICS	14. PURPOSE	PROTECTION REQUIRED	15. EST. TIME OF USAGE PRE-OP. LAUNCH		17. SPECIAL MONITORING REQUESTS					
13	HSQ YX	230.9 MC	*	OV-1 Status T/M	*			Note: Items 6-21 require no flight support prior to final orbit injection.					
14	HSQ SX	245.3 MC	*	OV-4 (R) Scientific Data Link	*								
15	HSQ SX	249.9 MC	*	OV-4 (R) Scientific Data Link	*								
16	HSQ SX	255.1 MC	*	OV-4 (R) Scientific Data Link	*								
17	HSQ SX	258.5	*	OV-4 (R) Beacon	*								
18		20.75 MC	*	Sat to Sat Trans	*								
19		34.3 MC	*	Sat to Sat Trans	*								
20		46.8	*	Sat to Sat Trans	*								
21	HSQ ZX YX SX	450 MC	*	Command (Sim Lab, OV-1, OV-4)	*								

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1. SECURITY CLASSIFICATION (U)

9. REVISION NO. 1


GENERAL METRIC DATA		SECURITY CLASSIFICATION		PAGE 210.1	
		U		1 April 1966	
		CONTINUED		210.1	
		MAC		DATA	
COORDINATE SYSTEM PREFERRED, POINT OF ORIGIN, NOTES, REMARKS AND OTHER GENERAL METRIC DATA		PROGRAM REQUIREMENT CODE		SYSTEM CODE	
		3900			
TITLE SLS/MOL-HSQ					
NO. TEST ITEM	TEST CODE				
5	ELQ	<p><u>Smoothing</u></p> <p>Spacecraft position data shall not be smoothed. If the random error components of derivative data can be reduced by smoothing, whereby the stated accuracy requirements can be better satisfied, smoothing will be permitted. During the terminal phase of spacecraft flight the smoothing interval shall not exceed 2 seconds. Smoothing intervals and filter characteristics shall be specified in the data report. The special parameters of (1) "ue" or magnitude of earth fixed velocity, (2) "ye" or heading angle of earth fixed velocity, (3) "je" or earth fix flight path angle, (4) "le" or Geocentric latitude, (5) "le" or geographic longitude, and (6) "r" or radius from center of earth to vehicle shall be smoothed or computed from smoothed data, which ever is more accurate. See item 4 on page 211.1, 212, and 214.</p>			
6	HSQ	<p><u>Editing of Smoothed Data</u></p> <p>Data editing will be allowed. Obviously incorrect data points may be removed is needed up to a maximum of 25% of the data points collected per second but no more than 10% in any 5-second period. A statement explaining method of editing and actual editing for a given set of data is required.</p>			
7	HSQ	<p><u>Best Estimate of Trajectory (BET)</u></p> <p>Best estimates of position and velocity trajectories mathematically combining data from all applicable instrumentation systems will be required as final data. These best estimates should be accompanied with error estimators as specified in Item 4, page 210. Coordinate systems to be as specified on page 210, item 1, above.</p>			



METRIC MIDCOURSE DATA										1. SECURITY CLASSIFICATION		2. PAGE																																																																			
TIII SLS/MOL-HSQ										U		212																																																																			
5. PROGRAM TITLE										6. PROGRAM REQUIREMENT CODE		7. SYSTEM CODE																																																																			
										3900																																																																					
8. CONTRACTOR										MAC		212																																																																			
9. DATED																																																																															
10. TEST CODE										11. DATA REQUIRED		12. INTERVAL (RANGE-ALTITUDE-TIME)		13. DATA POINTS/SEC		14. REDUCED DATA ACCURACY		15. CLASS I		16. CLASS II		17. CLASS III		18. PURPOSE AND REMARKS																																																							
19. ITEM NO.																																																																															
1										HSQ										Position*										Stg III first burn cutoff to S/C separation, plus a 30 sec minimum period after S/C separation and prior to S/C re-entry (400K Ft. Alt)										10/sec										+ 1000 ft. each Axis										+ 100 ft. each Axis										<p>NOTES:</p> <p>1. These data required for post flight analysis.</p> <p>2. A suitable instrumentation ship, located between ETR Stations 9.1 and 12, will be required for acquisition of metric midcourse data. These data shall be of sufficient quantity and quality to insure the proper up-dating of acquisition look-angles for Sta. 12 radar.</p>									
2										Velocity*										Stg III first burn cutoff to S/C separation, plus a 30 second minimum period after S/C separation and prior to S/C re-entry (400K Ft. alt).										10/sec										+ 100 F.P.S.										+ 10 F.P.S.										<p>3. Estimates of data accuracy will be provided on copies of the reduced data.</p> <p>4. Metric data requirements for the transtage/LAB following Stage III, first burn cutoff will be presented in PR 3700.</p>																			
3										Acceleration*										Stg III first burn cutoff to S/C separation, plus a 30 second minimum period after S/C separation and prior to S/C re-entry (400K Ft. Alt).										10/sec										+ 1000 ft. each Axis										+ 100 ft. each Axis										<p>* Quick look FVA will be required only in the event of major malfunction during flight. In the event it is required the data should be transmitted from appropriate recording sites via single side band radio or other suitable means.</p>																			
4										Special Parameter as listed in Item 4 on Page 211.1																																																																					

AFMTC FORM 328 JUN 61

PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.



1. SECURITY CLASSIFICATION

(U)

2. REVISION NO.

1

METRIC TERMINAL DATA										1. SECURITY CLASSIFICATION	
3. PROGRAM TITLE TII SL3/MOL-HSQ										2. PAGE 214	
5. PROGRAM REQUIREMENT CODE 3900										3. DATE 1 April 1966	
7. SYSTEM CODE										4. REPLACES PAGE(S) 214	
9. CONTRACTOR										DATED	
13. INTERVAL (RANGE-ALTITUDE-TIME)										14. PURPOSE AND REMARKS	
15. DATA POINTS/SEC											
16. REDUCED DATA ACCURACY ±											
CLASS I										CLASS II	
CLASS III											
10. ITEM NO.	11. TEST CODE	12. DATA REQUIRED	13. INTERVAL (RANGE-ALTITUDE-TIME)	14. DATA POINTS/SEC	15. REDUCED DATA ACCURACY ±	16. CLASS I	16. CLASS II	16. CLASS III	NOTES:		
1	HSQ	Position	Acquisition of S/C signal at ETR station 12 to impact.	10/sec.	+ 1000 ft. each axis	+ 1000 ft. each axis	+ 100 ft. each Axis		<p>1. Adequate terminal metric data is essential to the success of the mission. Acquisition of Spacecraft tracking at earliest possible time is required. Acquisition prior to 200K altitude is highly desirable with acquisition by 120K being mandatory. Radar look-angle updating data from the radar tracking ship is required.</p> <p>2. Estimates of data accuracy will be provided on copies of the reduced data.</p> <p>3. Quick look FVA will be required only in the event of major malfunction during flight. In the event it is required the data should be transmitted from appropriate recording sites to Sta. #1 via SSB or other appropriate means.</p> <p>4. To satisfy the time requirement stated on Page 910.1, the raw data tapes recorded in the terminal area should be airlifted to Sta. #1 within twenty four hours after spacecraft impact.</p>		
2		Velocity	A.O.S. at ETR Station 12 to Impact	10/sec.	+ 100 F.F.S. Each Axis	+ 100 F.F.S. Each Axis	+ 10 F.P.S. each Axis				
3		Acceleration	A.O.S. at ETR Station 12 to Impact	10/sec.	+ 200 ₂ ft./sec	+ 200 ₂ ft./sec	+ 10 ₂ ft./sec				
4		Special parameters listed in Item 4, P. 211.1	Same as Item 1	Same as Item 1							
5	HSQ	Aerodynamic parameters of:									
	M	- Mach. no.									
	q _d	- Dynamic Pressure (lbs/ft ²)									
	R _n	- Reynolds number per ft. (1) ft.									
6	HSQ	Quick-look FVA									



OTHER METRIC DATA				1. SECURITY CLASSIFICATION	
5. TEST PROGRAM TITLE		6. PROGRAM REQUIREMENT CODE		7. SYSTEM CODE	
TIII SLS/MOL-HSQ		3900			
8. TEST PROGRAM TITLE		9. PROGRAM REQUIREMENT CODE		10. SECURITY CLASSIFICATION	
				(U)	
11. TEST CODE		12. SECURITY CLASSIFICATION		13. DATE	
				18 May 1966	
14. TEST CODE		15. SECURITY CLASSIFICATION		16. REPLACES PAGE(S)	
				New	
17. DATED		18. SECURITY CLASSIFICATION		19. SECURITY CLASSIFICATION	
1.	Bx	<p>Record 1</p> <p>Word 1 Tape Identification</p> <p>2 Satellite Identification</p> <p>3 Year</p> <p>4 Day</p> <p>5 Second</p> <p>6 Year (UMT)</p> <p>7 Day (UMT)</p> <p>8 Second (UMT)</p> <p>9 intervals</p> <p>Record 2 (Ephemeris)</p> <p>1 Year, month, day</p> <p>2 Second</p> <p>3 Longitude - deg</p> <p>4 Good. Latt - Deg</p> <p>5 Altitude - KM</p> <p>6 Geoc Latt - Deg</p> <p>7 Radial Dist - KM</p> <p>8 Velocity - Km/sec</p> <p>9 X-Km</p> <p>10 Y-Km</p> <p>11 Z-Km</p> <p>12 X-Km/sec</p> <p>13 Y-Km/sec</p> <p>14 Z-Km/sec</p> <p>Data interval = 1/4 sec</p>			
2.	ZX	<p>Corner Reflectors - Will require prompt transmission of orbital elements in the SPADATS format as quickly as possible after launch and at each update. If SPADATS format is not available, a complete description of the elements used by AFMTC/SSD. Elements will be used for on-site computations of Metric data by an existing 1620 computer.</p>			
3.	ZX	<p>Paint Pattern - Same as Item 2.</p>			



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JUN 61

1. SECURITY CLASSIFICATION


(U)

9. REVISION NO.

1

TELEMETRY DATA										1. SECURITY CLASSIFICATION		2. PAGE 230		
										(U)		3. DATE 12 Nov. 1965		
												4. REPLACES PAGE(S)		
										5. CONTRACTOR		DATED		
5. PROGRAM TITLE										6. PROGRAM REQUIREMENT CODE		7. SYSTEM CODE		
TIII SLS/MOL-HSQ										3900		MC, MAC		
10. ITEM NO.	11. TEST CODE	12. LINK FREQ-MC & TYPE	13. CHANNEL		14. RATE, MEASURING -KPS, BPS	15. RECORDING INTERVAL (TIME, POSITION OR FLIGHT PHASE)		16. DATA ACCURACY FINAL-±%	17. REQUIRED IN REAL TIME				18. PURPOSE AND REMARKS	
			NO.	FREQ. -MC		DEV -±%	NO. OF SEG		CLASS I	CLASS II	TAPE	PEN		OSC
1	HSQ	231.0 SSB/FM	(See Page 152)		Continuous	T-240 Sec. thru Re-Entry			X	X			Acoustic and Vibration Data	
2	HSQ	236.2 PCM/FM			172.8K bps NRZ				X	X			Data from Airborne Instrumentation System	
3	HSQ	259.7 PCM/FM (NRZC)			51.2 K BPS	T-240 Sec. to splash			X	X	X		1) Average is not expected during the blackout portion of flight. 2) Blackout is expected to occur from T+1123 to T+1489 elapsed time.	
4	HSQ ZX	*236.2			45 sps (2 VC 0) Real time 1170 sps (2 VC 0) stored	See Notes 230.5			X	X			3) AFTER will be required to receive and record real time telemetry data for post flight evaluation. Recordings are desired from ETR Sta #1, 3, 7, 9.1, and 12 plus two ships and two JC-130 aircraft. (Notes on 230.5)	
* Time shared with PCM (Item 2)														

AFMTC FORM 32F JUN 61
 PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.



1. SECURITY CLASSIFICATION (U)
 2. REVISION NO. 1

TELEMETRY DATA			1. SECURITY CLASSIFICATION		2. PAGE 230.1	
3. PROGRAM TITLE			4. DATE 18 May 1966		5. REPLACES PAGE(S) 230.1	
6. PROGRAM REQUIREMENT CODE 3900			7. SYSTEM CODE		8. CONTRACTOR MC	
Item No.	Test Code	Note	9. DATED 230.1			
			TEST CODE:			
1	All		<p>Telemetry recording will utilize predetection techniques for PCM, SSB and PAM data recording. Predetection is a Class I requirement at all supporting AMR stations having predetection capability. Predetection frequency shall be 900 KC. Predetection recording shall be at 120 ips \pm 0.25%. Wow and Flutter \pm 0.25% from 0.2 cps to 10 KC, frequency response 3 db from 400 cps to 1 MC. S/N ratio 24 db from 400 cps to 1 MC.</p>			
2	All		<p>Original PCM and SSB predetection tapes are required whenever available. (Also PAM)</p>			
3	All		<p>All magnetic tapes furnished by the AFMTC for data purposes, shall be new, unspliced stock. The data shall be recorded on 7-track, 1/2" wide tapes, using 14" diameter tape reels. Tape type shall be Scotch 951 or equivalent. Prior to usage the magnetic tape shall be run through the recorder in a normal record mode, repacked on the supply reel and degaussed.</p>			
4	All		<p>Recordings are required from T-240 seconds to loss of data, at Station 1, and from data acquisition to loss of data at down range stations.</p>			
5	All		<p>The signal strength at the receiver AGC must be recorded on magnetic tape for all PCM/FM and SSB/FM rf carriers. All stations supporting the test shall record the RF signals strength and center frequency in real time on pen recorders. These data should be calibrated logarithmically with an accuracy of \pm 3 db from 1-5000 uv at station 1, 1-1000 uv at down range stations and the ORVs, 1-1500 uv on aircraft. The calibration should be applied to the preamplifier input.</p>			
6	All		<p>Magnetic tape recordings of each telemetry link are a Class I requirement (see track assignment pages 230.3 - 203.4).</p>			
7	All		<p>Precision reels and electromagnetic shielded cans shall be used for PCM serial and SSB magnetic tapes. (Also PAM)</p>			
8	All		<p>The preflight telemetry calibration of the SSB/FM will be generated by MC during the last 90 seconds prior to lift-off, and recorded by AFMTC on the tape listed under item 15 page 230.4.</p>			
9	All		<p>It is requested that AFMTC generate and record a 100 KC wow and flutter compensation signal to be recorded on all magnetic tapes as stated in the tape formats listed on pages 230.3 - 230.4.</p>			

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1. SECURITY CLASSIFICATION

(U)

2. REVISION NO.

63

1

TELEMETRY DATA				1. SECURITY CLASSIFICATION		2. PAGE
PROGRAM TITLE		TIII SLS/MOL-HSQ		(U)		230.2
PROGRAM REQUIREMENT		7. SYSTEM CODE		B. CONTRACTOR		3. DATE 18 May 1966
CODE 3900				MC		4. REPLACES PAGE(S)
						230.2
						DATED
						TEST CODE:
ITEM NO.	TEST CODE	NOTE	NOTES, REMARKS, SPECIAL INSTRUCTIONS, ETC.			
10	All		It is required that analog records of the TLM-18 azimuth and elevation, orientation indications and tracking error signals from all stations be recorded.			
11	All		PCM/FM and SSB/FM telemetry data are to be recorded on magnetic tape recorders having a 1 MC minimum band width for approximately 15 minutes per test for CST.			
12	All		All receivers shall have a bandpass of 500 KC and intermediate frequency of 900 KC			
13	All		One ship, to be identified by AFETR, will be required to monitor the end of stage III burn, Gemini separation, and stage III retro. Possible location of this ship would be 14.2° N. latitude and 48.9°N. longitude.			
14	HSQ ZX		Recordings are required whenever the PAM is commanded on during 6 day period. (PFOAR)			



TELEMETRY DATA		1. SECURITY CLASSIFICATION (U)		2. PAGE 230.3	
3. PROGRAM TITLE TIII SLS/MOL-HSQ		6. PROGRAM REQUIREMENT CODE 3900		3. DATE 18 May 1966	
7. SYSTEM CODE		8. CONTRACTOR MC		4. REPLACES PAGE(S)	
NOTES, REMARKS, SPECIAL INSTRUCTIONS, ETC.		DATED 230.3		TEST CODE:	
ITEM NO.	TEST CODE	NOTE	<p>Telemetry tape format for flight test data transmitted over the PCM/FM telemetry links described on pages 152.1 and 152.2.</p> <p><u>PRIMARY RECORDER</u></p> <p><u>TRACK</u></p> <ol style="list-style-type: none"> <ol style="list-style-type: none"> 1 pps timing (B-1), 7.35 KC RDB, Channel 11 100 pps timing (D-5), 22 KC RBD, Channel A Voice annotation, 40 KC RBD Channel C and 70 KC RBD, Channel E Receiver A - Flight Test Data - Sim Lab PCM/FM (left hand circular polarization) Receiver B - Gemini PCM/FM (right hand circular polarization) PAM/FM (turned on only after PCM is off) Unassigned. Receiver C - Flight Test Data - Sim Lab PCM/FM (right hand circular polarization) PAM/FM (turned on only after PCM is off) Receiver D - Gemini PCM/FM (left hand circular polarization) <ol style="list-style-type: none"> Signal Strength of Receiver C 5.4 KC RBD Channel 10 Signal Strength of Receiver D, 10.5 KC RBD Channel 12 100 KCreference (wow and flutter), direct 17 KC Speedlock, direct 		

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1. SECURITY CLASSIFICATION

(U)

2. REVISION NO.

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1

TELEMETRY DATA				1. SECURITY CLASSIFICATION		2. PAGE 230.4	
PROGRAM TITLE				3. DATE 18 May 1966		4. REPLACES PAGE(S) 230.4	
TIII SLS/MOL-HSQ				5. CONTRACTOR MC		DATED	
6. PROGRAM REQUIREMENT CODE 3900				7. ITEM CODE		TEST CODE:	
NOTES, REMARKS, SPECIAL INSTRUCTIONS, ETC.							
15	All		<p>Telemetry format for vibration and acoustic data transmitted over sim lab SSB/FM telemetry link described on Page 152 should be as follows:</p> <p><u>PRIMARY RECORDER</u></p> <p><u>TRACK</u></p> <ol style="list-style-type: none"> 1. Unassigned 2. Receiver E - Sim Lab acoustic and vibration SSB/FM (right hand circular polarization) 3. <ol style="list-style-type: none"> a. 1 pps timing (B-1), 7.35 KC RDB Channel b. 100 pps timing (D-5), 22 KC RDB Channel c. Voice annotation, 40 KC RDB Channel C and 70 KC RDB Channel E 4. Receiver E - Sim Lab Acoustic and Vibration SSB/FM (right hand circular polarization) 5. Unassigned 6. Receiver F - Sim Lab Acoustic and Vibration SSB/FM (left hand circular polarization) 7. <ol style="list-style-type: none"> a. Signal strength of Receiver E, 5.4 KC RDB Channel 10 b. Signal strength of Receiver F, 10.5 KC RDB Channel 12 c. 100 KC reference (wow and flutter), direct d. 17 KC Speedlock, direct <p>NOTE: Standard AFETR practice of providing a backup recorder is requested. Data will only be required from one source.</p>				



SUPPLEMENTARY

INFORMATION

(Notes)		TELEMETRY DATA		1. SECURITY CLASSIFICATION		2. PAGE 230.5	
				UNCLASSIFIED		3. DATE 18 May 1966	
				MC		4. REPLACES PAGE(S)	
5. PROGRAM TITLE		6. PROGRAM REQUIREMENT CODE		7. SYSTEM CODE		8. CONTRACTOR	
TIII SLS/MOL-HSQ		3900				DATED	
10. ITEM NO.		11. TEST CODE		12. DATA REQUIRED, INTERVAL, ACCURACY, PURPOSE, REMARKS, ETC.			
1		HSQ		Reference Item # 4 pg. 230			
2		ZX		Ten seconds after shutdown of the transtage third burn the PCM and SSB links will be turned off and the FAM system actuated in order to be turned on by command control. From that point to the 144th hour after lift off the vehicle will sequence the dumping of the on board tape recorder at least once every three hours.			
3				The fuel cell experiment will require the real time monitor of its output current and voltage periodically to form a basis for purging through the command control system.			
4				Approximately 20 status measurements on one VCO will be required at Cape Canaveral every two to three Orbits to assess the condition of the vehicle and allow real time decision making in mission plans.			
5		HSQ		The following notes and page numbers apply to the FAM system: Page 230.1 - Items 1-5 Item 7 Item 9 Page 230.2 - Items 10 - 12 After the first shutdown of the FAM link (6 days) the vehicle will be supported by special experiment ground station; but after the end of the thirteenth day, the FAM system will be re-energized and the vehicle will be supported as in the first 6 day period until power depletion (approx. two days).			



HSQ SPACECRAFT		OTHER DATA		1. SECURITY CLASSIFICATION		2. PAGE	
5. PROGRAM TITLE		6. PROGRAM REQUIREMENT CODE		7. SYSTEM CODE		3. DATE	
TIII SLS/MOL-HSQ		3900		MAC		1 April 1966	
10. ITEM NO.		11. TEST CODE		8. CONTRACTOR		4. REPLACES PAGE(S)	
1		HSQ		DATED		240	
12. DATA REQUIRED, INTERVAL, ACCURACY, PURPOSE, REMARKS, ETC.							
<p>Telemetry data plus data which is not transmitted in real time is recorded on magnetic tape by tape recorders on board the HSQ Spacecraft. This tape will remain in the spacecraft. After spacecraft recovery and return to CKAFS, the recorders will be removed by MAC Personnel. In the event unusual circumstances require the removal of the tapes down range the task will be accomplished by MAC Personnel and the tapes returned to CKAFS by aircraft.</p> <p>Signal strength and AGC recordings of the radar tracking signals as received at all ETR Stations and instrumentation ships are required.</p> <p>Recordings showing the telemetry signal strength, deviation, and center frequency are also required from all ETR Stations and instrumentation ships.</p> <p>A preliminary Test Report showing a preliminary estimate of data coverage, AOS and LOS for the various stations, lift-off time and impact time is required within two hours after launch for use during the post-flight review meeting.</p> <p>A Recovery Report is required within 15 WD after termination of the test. This report should include, but should not be limited to:</p> <ul style="list-style-type: none">(a) The location of each component of the recovery force at lift-off.(b) The touchdown time, and impact point.(c) Time history covering contact and/or loss of contact with the re-entry vehicle by each component of the recovery force.(d) Identifying members (air-sea type) and their approximate location with respect to the re-entry module during times the re-entry vehicle is out of contact. Probable reasons for no contact are desired.(e) Activities and times required for:<ul style="list-style-type: none">(1) Air and sea recovery forces to locate and reach the re-entry vehicle.(2) Deployment of para-divers and flotation gear.(3) Attachment of flotation gear.(4) Recovery and transport of the re-entry vehicle to ETR Station #12. <p>A "quick look" tabular printout from the impact predictor is required. This printout should be based upon data gathered by station #1 plus that obtained by stations as far down range as possible.</p>							
6		HSQ					

(HSQ SPACECRAFT)		OTHER DATA		1. SECURITY CLASSIFICATION		2. PAGE 240.1	
5. PROGRAM TITLE		6. PROGRAM REQUIREMENT CODE		7. SYSTEM CODE		3. DATE 1 April 1966	
TIII SIS/MOL-HSQ		3900				4. REPLACES PAGE(S) 240.1	
10. ITEM NO.		11. TEST CODE		8. CONTRACTOR		DATED	
				MAC			
12. DATA REQUIRED, INTERVAL, ACCURACY, PURPOSE, REMARKS, ETC.							
7	HSQ	Extracts from the log of the operators of the telemetry receiving equipment at all ETR Stations and instrumentation ships are required. These extracts should show: (a) Time of acquisition of signal (AOS). (b) Time of LOS (Loss-Of-Signal) (c) Antenna azimuth and elevation at both AOS and LOS. (d) Unusual events, signals, etc., as observed.					
8	HSQ	Extracts are required from the tracking radar operators' logs for each of the ETR Stations and the instrumentation ships. These extracts should show: (a) Peak Power (b) Pulse Width (c) Type Coverage (Beacon or Skin) (d) Antenna Polarization. (e) PRF (f) Coding, if any (g) Noise figure of the Radar (h) Acquisition Data (1) Antenna Azimuth in mils at AOS and LOS (2) Antenna Elevation in mils at AOS and LOS (3) Slant Range of vehicle in N. M. at AOS and LOS. (i) Deviations, as observed, from nominal frequency (j) Irregularities in track, drop-outs, etc.					
9	HSQ	An electrical signal denoting "first motion" of the launch vehicle is required from an appropriate source delivered to the MAC telemetry van. This signal will then be imposed upon tape recordings, etc., as a timing signal. (28v nominal is desired.) The correlation accuracy desired is ± 2 m. s. The "first motion" signal should also be imposed upon the telemetry recordings taken by the Range at Sta. 1.					
10	HSQ	Magnetic tape recordings of certain telemetry data are required during certain prelaunch tests. Both the tests and the parameters to be recorded will be specified in applicable operations requirements.					
11	HSQ	Tabouts of the launch vehicle guidance parameters as produced by the QIAP program, subprogram TTQB, are required. (Reference page 240.3, item 38, PRD-3700).					

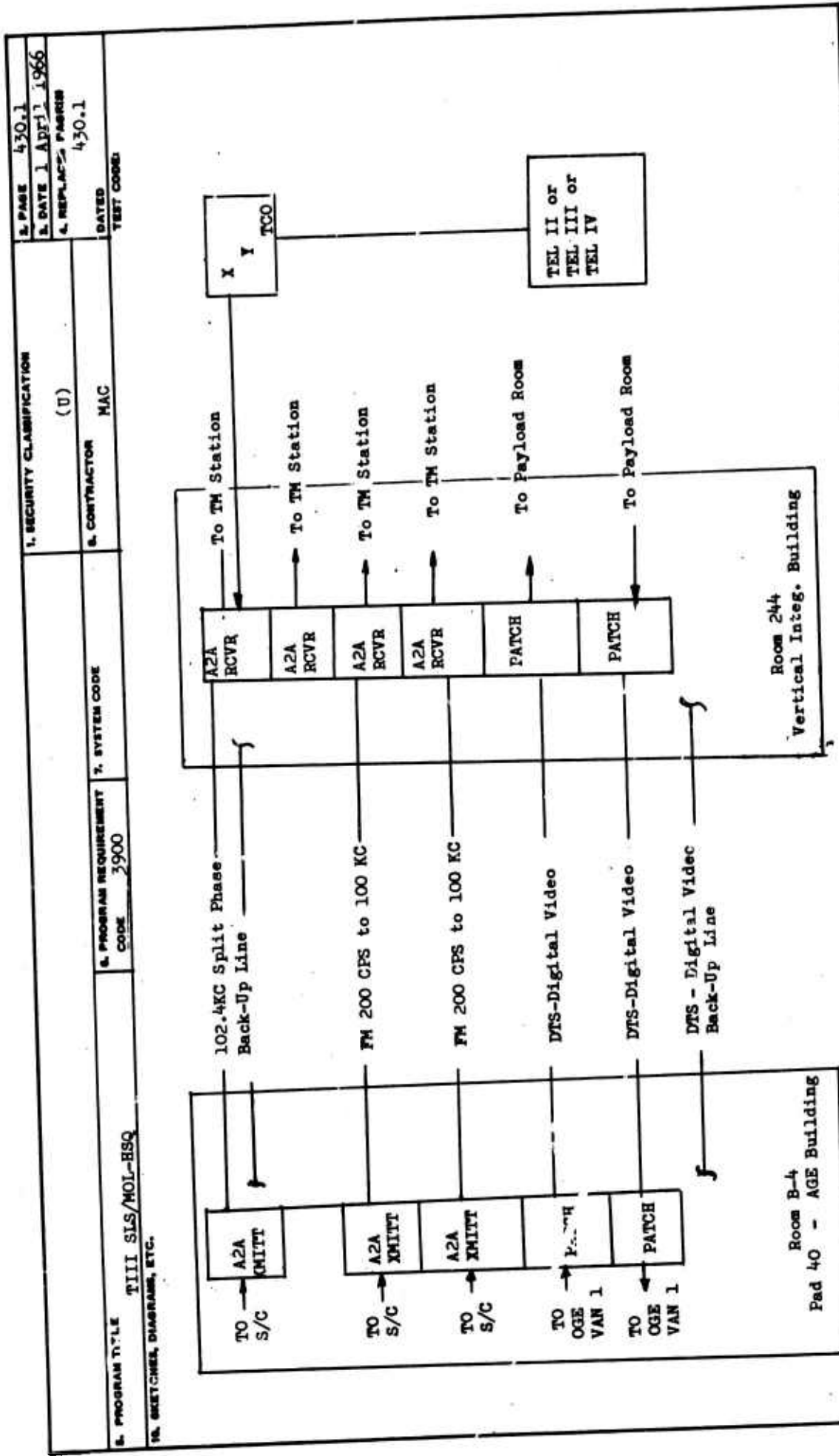


COMMUNICATIONS RECORDINGS									
HSQ SPACECRAFT			1. SECURITY CLASSIFICATION			2. PAGE 412			
5. PROGRAM TITLE			6. PROGRAM REQUIREMENT			3. DATE 1 April 1966			
12. REQUIRED RECORDINGS			7. SYSTEM CODE			4. REPLACES PAGE(S)			
11. TEST CODE			13. TIME CORRELATION			5. CONTRACTOR			
10. ITEM NO.			14. DURATION OF RECORDING			6. DATED			
1. HSQ			15. PURPOSE AND REMARKS			7. NEW Page			
1	HSQ	Radio communication between AF ETR Sta. #1 and members of the Recovery Force	X	Entire recovery period	Time correlation may be by voice. Instructions to recovery forces are of particular interest.				
2	HSQ	Radio communications between various members of the Recovery Force.	X	Entire recovery period	Time correlation may be by voice. Suggest recordings be made of Sta. #12.				
3	HSQ	MITOC recordings for HSQ Nets 22 thru 31 plus launch vehicle TC and SRO's nets. See page 431.	X	T-120 min. to termination	Time correlation may be by voice. Test analysis and data correlation.				
NOTES:			<p>1. Copies of the recordings of Items 1 and 2 will be required only if difficulties are encountered during search and retrieval operations.</p> <p>2. Copies of recordings of approximately five selected channels of Item 3, above, will be required. The channels selected for recording will be specified in the applicable OR.</p>						

WIRE - WIDE BAND										1. SECURITY CLASSIFICATION		2. PAGE	
5. PROGRAM TITLE										3. DATE		4. REPLACES PAGE(S)	
TIII SLS/MOL-HSQ										1 April 1966		430	
6. PROGRAM REQUIREMENT CODE										7. SYSTEM CODE		8. CONTRACTOR	
3900										MAC		DATED	
9. TYPE OF SERVICE										10. LOCATION OF OPERATING TERMINALS		11. PURPOSE AND REMARKS	
12. USE										13. STATION, BLDG., ROOM, ETC.		14. QTY	
13. ADMIN. OPS										14. BLDG.		15. STATION	
14. TEST CODE										15. FROM		16. TO	
1.	HSQ	X	A2A Equalized Lines (See Note 1)	2PR	From	AGE Bldg VIB	B-4	Pad 40 DTT Room to VIB FM Hardline from S/C	FM-Equal flat \pm ldb from 300 cps to 100 kc. Terminated at transmitting end 75 ohm unbalance and receiving end 125 ohms balanced.				
2	HSQ	X	A2A Equalized Lines (See Note 2)	2PR	From	AGE Bldg VIB	B-4	Pad 40 DTT Room to VIB Hardline from S/C	PCM 102.4kc split phase termina- ted each end 125 ohm balanced to ground. Grounds to be isolated.				
3	HSQ	X	Unequalized lines (See note 3)	3PR	From	AGE Bldg VIB	B-4	Pad 40 DTT Room to VIB	DTS Video 2kc phase shift key flat \pm ldb 800 cps to 4 kc. Terminated each end 125 ohms balanced to ground. Ground to be isolated.				
4	HSQ	X	A2A Equalized Lines	1PR	to	VIB	244	Tel II or III Recvr to VIB	PCM 51.2KB NRZC terminated to match receiver output and 125 ohm balanced to ground. Grounds to be isolated.				

NOTES:
 1 - Both pair active
 2 - One pair active and
 one pair spare.
 3 - Two pair active and
 one pair spare.





AFMTC FORM 50 NOV 61 PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

1. SECURITY CLASSIFICATION (U)

2. REVISION NO. 1

1. SECURITY CLASSIFICATION		2. PAGE 431.1	
(U)		3. DATE 1 April 1966	
4. REPLACES PAGE(S) 431.1		5. DATED	
6. PROGRAM REQUIREMENT NO. 3900		7. SYSTEM CODE	
8. CONTRACTOR MAC		9. SECURITY CLASSIFICATION	
10. TEST PROGRAM TIII SLS/MOL-HSQ		11. REMARKS/SPECIAL INSTRUCTIONS/ REQUIREMENTS	
12. LOCAL AREA		13. MOPS NET FUNCTION OR NAME	
11. TEST CODE		14. MOPS	
10. ITEM NO.		13. MOPS	
24		22 2324 25 2627 28 2930 31	
25		OGE Van # 2 Seq. Rack 39 (*)	
26		OGE Van # 2 Seq. Rack 37 (*)	
27		OGE Van # 2 Pwr. Rack 35 (*)	
28		TLM Van Receiver Rack 61C	
29		TLM Van Simulator Rack 61B	
30		TLM Van Display Rack 201	
31		TLM Van Recorder Rack 196	
32		TLM Van Recorder Rack 198	
33		TLM Van PCM C/O Rack 5	
34		VIB-Platform 13	
35		VIB-Platform 14	
36		MST Envrn. Shelter - Platform 12	
37		MST Envrn. Shelter - Platform 13(**)	
38		MST Envrn. Shelter - Platform 13	
39		MST Envrn. Shelter - Platform 13	
40		MST Envrn. Shelter - Platform 14(**)	
41		MST Envrn. Shelter - Platform 14	
42		MST Envrn. Shelter - Platform 14	
43		Ready Room - Pad 40	
44		Room & Complex Support Building	
45		Support Trailer #3	
46		MSO - TLM Grd. Stat. Rm.#3456 (**)	
47		Base ITT - Pad 40	
AFMTC FORM 34B JUL 61		PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.	
1. SECURITY CLASSIFICATION		2. REVISION NO. 1	
(U)		MT 74	

MRD

See Page 431

[illegible]

TELETYPE										1. SECURITY CLASSIFICATION (U)		2. PAGE 433	
3. PROGRAM TITLE TIII SLS/MOL-HSQ										3. DATE 1 April 1966		4. REPLACES PAGE(S) 433	
5. PROGRAM REQUIREMENT CODE 3900										6. CONTRACTOR MAC		DATED	
7. SYSTEM CODE										8. LOCATION OF OPERATING TERMINALS STATION, BLDG., ROOM, ETC.		9. PURPOSE AND REMARKS	
10. TEST CODE										11. USE ADMIN. OPS		12. SECURITY YES NO	
11. ITEM NO.										13. STATION		14. ROOM	
1										All		X	
Hangar 1										Required to send and receive messages that are not to be handled through regular mail channels. Provides expeditious means of communications with Contractor's parent plant, and Vendors and Sub-Contractors on matters of Administration and Engineering, and Test Site Operations.		Equipment sufficient to satisfy this requirement exists and is installed.	
NOTE: Additional requirements, if necessary will be added as they are identified.													

AFMTC FORM 34D JUN 61 PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.



1. SECURITY CLASSIFICATION

(U)

2. REVISION NO

1

PUBLIC ADDRESS				1. SECURITY CLASSIFICATION		2. PAGE 434	
5. TEST PROGRAM TITLE		6. PROGRAM REQUIREMENT CODE		7. SYSTEM CODE		3. DATE 1 April 1966	
T III SLS/MOL-HSQ		3900				4. REPLACES PAGE(S) 434	
10. ITEM NO.	11. TEST CODE	12. PURPOSE	13. SPEAKER LOCATION	14. REMARKS	9. REVISION NO.		
1	ALL	To provide a means of informing personnel of operations and emergency conditions consistent with routine and special testing.	VIB - Launch Control Center (LCC)	Existing			
2	ALL	Same	VIB - T/M Van	Tie speaker with volume control into VIB public address system.			
3	ALL	Same	Pad 40 MST - Level 13 Clean Room	Locate one microphone on east wall of Clean Room. Tie speaker and microphone into Pad 40 public address system.			
4	ALL	Same	Pad 40 MST - Level 14 Clean Room	Tie speaker into Pad public address system.			
5	ALL	Same	OGE Van #1	Tie into VIB or Pad 40 paging system dependent on location of van.			
6	ALL	Same	OGE Van #2	Same			
7	ALL	Same	AGE Building - Electrical Equipment Room	Tie speaker into Pad 40 public address system.			
8	ALL	Same	Room 110 - Pad 40 Ready Bldg.	Locate one microphone in room 110 of Pad 40 Ready Bldg. Tie mike to existing system. Existing speakers are adequate.			
9	ALL	Same	Room 110 Complex Support Bldg.	Locate one microphone in Room 110 of the Complex Supt. Bldg. Tie mike to existing system. Tie speaker into Pad Public Address System.			
AFMTC FORM 34E PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.					(U)		1



CLOSED CIRCUIT TELEVISION									
3. PROGRAM TITLE		1. SECURITY CLASSIFICATION		2. PAGE 435		3. DATE 1 April 66		4. REPLACES PAGE(S) 435	
TIII SLS/MOL-HSQ		(U)						DATED	
5. PROGRAM REQUIREMENT CODE 3900		7. SYSTEM CODE		8. CONTRACTOR MAC					
10. ITEM NO.		11. TEST CODE		12. SUBJECT(S) TO BE VIEWED		13. MONITOR LOCATION(S)		14. INTERVAL (TIME)	
								15. PURPOSE AND REMARKS	
1	HSQ	Launch Complex 40: Two (2) cameras will be located in the Environmental Shelter with four (4) usable camera locations. One (1) camera will be located on the UT (See Note #1) mounted for best view of S/C umbilicals and thrusters after shelter break-up.		Three (3) 17" TV monitors to be mounted above the Payload Control Room (Rm #227) racks. The capability is required for monitoring any three (3) of the camera locations. (See Note #3).		Continuous		Required for monitoring of spacecraft checkout, test, hazardous servicing, of the Reaction Control System, static fire, umbilical drop, and launch.	
2	HSQ	Launch Complex 40: Two (2) cameras to view the over all launch vehicle, payload and existing complex area. (See Note #2).		Two (2) 17" TV monitors to be mounted in the Payload Control Room (Rm #227) racks.		Continuous		Required for monitoring of the over all launch vehicle, Payload and Complex areas by the personnel in the Payload Control Room.	
		NOTE: 1. This requirement will be satisfied by use of existing Camera #13, located on Level #12 of the UT. 2. This requirement will be satisfied by use of existing cameras located on Complex 40. 3. Video recording of a single, but selected channel mentioned in Item #1, above, is required at the AFETR TV central during launch operations and for major pad tests. Playback capability to the Payload Control Room (Rm 227) in the VIB is required. The video tapes will be made available to the Range User.							

R

DATA HANDLING SYSTEM				1. SECURITY CLASSIFICATION	2. PAGE 470-5
5. PROGRAM TITLE				3. DATE 18 May 1966	4. REPLACES PAGE(S)
TIII SLS/MOL-HSQ				6. CONTRACTOR/CONTRACT NUMBER	7. DATED
6. PROGRAM REQUIREMENT CODE				8. (U)	9. New
3900				MC	
DESCRIPTION OF DATA HANDLING SYSTEM					
10. ITEM NO.	11. TEST CODE	12. DESCRIPTION			
1	HSQ	Carnawan - Telemetry Equipment - Ascent T/M for sim. lab & experiments PCM/FM, 1 station			
2	ZX	PAFB - Telemetry Equipment - On orbit T/M for sim. lab & experiments Antigua FAM/FM Acquisition over 6 day period to be determined Ascension estimated 14/4 min. acquisition/day Carnawan Hawaii Pt. Arguello			

AFMTC FORM 34H-2
JUN 61



1. SECURITY CLASSIFICATION

(U)

9. REVISION NO.

1

COMMAND CONTROL										1. SECURITY CLASSIFICATION		2. PAGE 499		
5. PROGRAM TITLE TIII SLS/MOL-HSQ										UNCLASSIFIED		3. DATE 3 January 1966		
6. PROGRAM REQUIREMENT CODE 3900										7. SYSTEM CODE		4. REPLACES PAGE(S)		
8. CONTRACTOR MC										9. CONTRACTOR		DATED		
12. COMMAND FUNCTION										13. TIME		14. FUNCTION CODE		
15. PURPOSE AND REMARKS/SPECIAL INSTRUCTIONS										16. TEST CODE		17. ITEM NO.		
1	HSQ	a) MOL/HSQ Address b) Low Power T/M On c) Propellant Gauging On	LAB above horizon	Tones 4 + 10	<p>The purpose of the command control system is to permit various modes of operation for the data acquisition system and certain experiments. These modes are ground controlled and are in some cases based on real time T/M readout at the appropriate ground station.</p> <p>The MOL/HSQ address code of tones 4 + 10 must precede each execute command (2 through 12) and each execute command must be sent with 15 seconds of the address code. The address code and each execute command must be transmitted for a minimum duration of 2 seconds.</p>									
2	HSQ	Recorder to playback mode	T/M carrier received on Gnd. Approx 10-60 sec after command #1	Tones 6 + 7										
3	HSQ	a) Recorder to record mode b) T/M Off c) Prop Gauge Off	1 min before dropping to horizon	Tones 6 + 8										
4	HSQ	Spare	-	Tones 6 + 13										
5	HSQ	a) Fuel Cell On	First PAFB Pass.	Tones 6 + 14										
6	HSQ	b) Fuel Cell Purge On Fuel Cell Purge Off	T/M Readout Fixed Time after Command #5	Tones 7 + 8										
7	HSQ	Orbis Low On	H1 Power T/M fails to come on	Tones 7 + 13										
8	HSQ	Orbital Data Sys On	Lo Power T/M fails to come on	Tones 7 + 14										
9	HSQ			Tones 7 + 15										
10	HSQ	a) H1 Power T/M On b) Low Power T/M Off		Tones 8 + 13										

AFMTC FORM 34N-1
NOV 61

1. SECURITY CLASSIFICATION
UNCLASSIFIED

2. REVISION NO.
1

COMMAND CONTROL										1. SECURITY CLASSIFICATION UNCLASSIFIED		2. PAGE 400.1 3. DATE 3 January 1966 4. REPLACES PAGE(S)	
5. PROGRAM TITLE TIII SLS/MOL-HSQ				6. PROGRAM REQUIREMENT CODE 3900		7. SYSTEM CODE		8. CONTRACTOR MC		9. DATED			
10. ITEM NO.	11. TEST CODE	12. COMMAND FUNCTION	13. TIME	14. FUNCTION CODE	15.	PURPOSE AND REMARKS/SPECIAL INSTRUCTIONS							
11	HSQ	Orbis Low Off	Fixed Time after Command #7	Tones 8 + 14									
12	HSQ	Fuel Cell Off		Tones 13 + 14									
13	HSQ	Orbital Data Sys Off		Tones 13 + 15									
14	HSQ	Spare		Tones 6 + 15									
15	HSQ	Spare		Tones 14 + 15									
16	HSQ	Redundant # 1		Tones 4 + 10									

AFMTC FORM 34H-1 NOV 61		1. SECURITY CLASSIFICATION UNCLASSIFIED		5. REVISION NO. 1		3	
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PROPELLANTS, GASES AND CHEMICALS (FOR MISSILE OR TEST VEHICLE)										1. SECURITY CLASSIFICATION U		2. PAGE 530							
5. PROGRAM TITLE TIII SLS/MOL-HSQ										3. DATE April 1966		4. REPLACES PAGE(S) 530							
6. PROGRAM REQUIREMENT CODE 3900										7. SYSTEM CODE MAC		8. CONTRACTOR DATED							
11. NAME/DESIGNATION										12. MILITARY SPECIFICATION NUMBER									
13. UNITS										14. RUF OR RF									
15. CY 65 66 67 68										16. CY 66 67 68									
17. CY 65 66 67 68										18. CY 66 67 68									
19. TONS										20. POUNDS									
21. GALLONS										22. QUANTITY REQUIRED/QUARTER									
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5. PROGRAM TITLE		6. PROGRAM REQUIREMENT CODE		7. SYSTEM CODE		8. CONTRACTOR		1. SECURITY CLASSIFICATION		2. PAGE	
HTTC		THI SLS/MOL-HSQ		3900		MC		UNCLASSIFIED		530.2	
10. ITEM NO.		11. NAME/DESIGNATION		12. MILITARY SPECIFICATION NUMBER		13. UNITS		14. BUFG OR RF		15. QUANTITY REQUIRED/QUARTER	
						TONS SC POUNDS GALLONS CUBIC FEET				FY 66 CY 66 FY 67 CY 67 FY 68 CY 68 FY 69 CY 69	
			DEIONIZED WATER				X				
			DISTILLED WATER				X				
			ETHYL ALCOHOL				X				
			FLUORINE (LIQUID)				X				
			HELIUM				X				
			HYDRAZINE				X				
			HYDROGEN (LIQUID)				X				
			HYDROGEN (GAS)				X				
			HYDROGEN PEROXIDE - 38%				X				
			HYDROGEN PEROXIDE - 50%				X				
			IRFMA				X				
			NITROGEN - LIQ (LIQUID)				X				
1			NITROGEN - GAS (GASEOUS)	Ref 540.5			X	RF			
			NITROGEN TETROXIDE				X				
			OXYGEN - LOX (LIQUID)				X				
			RP - I				X				
			UDMH				X				



AFMTC FORM 35B NOV 62 / PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

1. SECURITY CLASSIFICATION

(U)

16. TELEPHONE NO.

9. REVISION NO.


1

MISCELLANEOUS LUBRICANTS, HYDRAULIC FLUIDS, PRESERVATIVES, ETC.															1. SECURITY CLASSIFICATION	
5. PROGRAM TITLE TIII SLS/MOL-HSQ															2. PAGE 532.	
6. PROGRAM REQUIREMENT NO. 3900															3. DATE 1 April 1965	
7. SYSTEM CODE															4. REPLACES PAGE(S)	
8. CONTRACTOR MAC															DATED	
9. SECURITY CLASSIFICATION															1	
10. ITEM NO.	11. NAME/DESIGNATION	12. MILITARY SPECIFICATION NUMBER	13. UNITS	14. RUF OR RF	15. FY 66	15. CY 66	15. FY 67	15. CY 67	15. FY 68	15. CY 68	15. FY 69	15. CY 69	15. FY 70	15. CY 70	15. FY 71	15. CY 71
1	Grease (Wheel Bearing)	MIL-C-3545A	X	0	RF											
2	Grease Lub (Gen. Purpose)	MIL-L-7111	X	0	RF											
3	Grease Low & High Temp (GLT)	MIL-G-3278	X	0	RF											
4	Versilube F-50 (GE) Silicone		X	0	RF											
5	Grease - Silicone (G-300)		X	0	RF											
6	MSC 198 Coolant (Monsanto Chemical Co)	MMS-602R	X	0	RF											
7	Lacquer Thinner		X	0	RF											
8	Archlor 1254		X	0	RF											



CHEMICAL AND PHYSICAL ANALYSIS									
1. SECURITY CLASSIFICATION				2. PAGE 540.		3. DATE 1 April 1966		4. REPLACES PAGE(S)	
(U)								540	
5. CONTRACTOR MAC				6. PROGRAM REQUIREMENT NO. 3900		7. SYSTEM CODE		8. DATED	
9. SECURITY CLASSIFICATION				10. NAME/DESIGNATION		11. MIL. SPEC. NO.		12. SAMPLING TIMES	
(U)									
10. ITEM NO.	11. TEST CODE	12. NAME/DESIGNATION	13. MIL. SPEC. NO.	14. DETAILS OF ANALYSIS REQUIRED	15. OTHER	1. When trailers are filled.			
1	HSQ	Gaseous Helium	MMS607 PS 12302, PS 20530 GCE 01-009-8 PB 10-81	1. Percentage purity 2. Hydrogen 3. Oxygen 4. Nitrogen 5. Carbon Monoxide 6. Carbon Dioxide 7. Hydrocarbons, Combined (Methane equivalent) 8. Dew Point	99.95 min. 10 ppm max 15 ppm max 50 ppm max (15 ppm) 5.0 ppm max 5.0 ppm max no requirement no requirement no requirement 0.05 mg/l max Moisture content at the Dew Point.				
				PARTICULATE (if specified) by authorizing document 10-25 microns 50-100 microns Larger than 300 microns 25-50 100-300	100/SCF Max 5/SCF max None/3SCF 0/SCF 10/SCF				

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1. SECURITY CLASSIFICATION
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CHEMICAL AND PHYSICAL ANALYSIS				1. SECURITY CLASSIFICATION		2. PAGE 540.1	
PROGRAM TITLE TIII SLS/MOL-HSQ				U		3. DATE 1 APR 11 1966	
4. PROGRAM REQUIREMENT NO. 3900				5. CONTRACTOR MAC		4. REPLACES PAGE(S) 540.1	
5. MIL. SPEC. NO.				6. ANALYSIS REQUIRED		7. DATED	
8. NAME/DESIGNATION				9. SAMPLING TIMES			
10. ITEM NO.	11. TEST CODE	12. NAME/DESIGNATION	13. MIL. SPEC. NO.	14. DETAILS OF ANALYSIS REQUIRED	15. ANALYSIS REQUIRED	16. SAMPLING TIMES	
2	HSQ	Nitrogen - GAN (Gaseous)	MIL-P-27401B PS 12302, 20530 PB 10-81 GCE 01-009-9	1. Percentage purity 2. Total Hydrocarbons By weight as carbon By volume as Methane 3. Moisture Content PARTICULATE COUNT * 10-25 microns 25-50 microns 50-100 microns 100-300 microns 300 microns N ₂ O ₄ content MMH content 6. Total filterable solids	99.5% min 25 ppm max 58.3 ppm max .02 mg/l (-63 Deg F Dew Point) 100/SCF max 200/SCF max 15/SCF max 10/SCF max 0/SCF max 20ppm max 20ppm max 1.0 mg/SCF max	1. When Dewar is loaded	
3	HSQ	Argon (Gaseous)	MMS 601 PS 12302, 20530 GCE 01-009-10 PB 10-81	1. Percentage purity 2. Nitrogen 3. Oxygen 4. Hydrogen 5. Dew Point 6. Particulate: * 10-25 microns 50-100 Larger than 300 microns 25-50 microns 100-300 7. Total Particulate wt. * If specified by the accompanying GCE	99.997% min 13 ppm max 7 ppm max 5 ppm max -80 Deg F 100/SCF 5/SCF None/3 SCF 20/SCF max 1/SCF max 1.0 mg/SCF max.	As required per applicable operation requirements document	



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1. SECURITY CLASSIFICATION


(U)

3.

REVISION NO. 1
MT 57

CHEMICAL AND PHYSICAL ANALYSIS										1. SECURITY CLASSIFICATION		2. PAGE 540.2	
5. PROGRAM TITLE					6. PROGRAM REQUIREMENT NO.					7. SYSTEM CODE		3. DATE 1 April 1966	
1 III SLS/MOL-HSQ					3900					U		4. REPLACES PAGE(S) 504.2	
10. ITEM NO.		11. TEST CODE		12. NAME/DESIGNATION		13. MIL. SPEC. NO.		14. DETAILS OF ANALYSIS REQUIRED		15. SAMPLING TIMES		DATED	
4		HSQ		Nitrogen Tetroxide		MIL-P-26539A Amend#1 (N ₂ O ₄) PS 20530 PB 10-81 MIL-P-27408		1. N ₂ O ₄ Total Assay 99.5% min 2. Water equivalent 0.1% max 3. Chloride as Nitrosyl Chloride 0.08% max 4. Particulate Wt. 10.0 mg/Liter max 5. Nitric Oxide % by wt. 0.45% min. 0.85% max. 6. Percentage N ₂ O ₄ purity 99.5% less % N.O. min PARTICULATE: * 10-25 microns 100/100 ml max 25-50 microns 20/100 ml max 50-100 microns 5/100 ml max Larger than 300 microns none/100 ml max 100-300 microns 1/100 ml max		1. Upon receipt 2. Every 30 days 3. Before use (2 days) 4. After loading			
5		HSQ		Monomethyl Hydrazine (MMH)		MIL-P-27404, PS20530 PB 10-81 GCE 01-009-12		1. Percentage purity 98.0 2. Water plus soluble impurities 2.0% max 3. Density at 77 Deg F (25 Deg F) 0.872 ± 0.004 in grams/milliliter 4. Transmittancy (percent) 90 min. PARTICULATE COUNT* 10-25 microns 100/100 ml max 25-50 microns 20/100 ml max 50-100 microns 5/100 ml max Larger than 300 microns None/100 ml max 100-300 microns 1/100 ml max Total Filterable Solids 1.0 mg/100 ml. max. *If specified by the accompanying GCE		1. Upon receipt 2. 1 sample from each drum monthly 3. Before use (2 days) 4. After loading			

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1. SECURITY CLASSIFICATION (U)
 REVISION NO. 3
 MT 0

Spacecraft									
CHEMICAL AND PHYSICAL ANALYSIS									
1. SECURITY CLASSIFICATION		2. DATE 18 May 1966		3. PAGE 540. 3		4. REPLACES PAG 151		5. DATED	
6. CONTRACTOR		7. SYSTEM CODE		8. PROGRAM REQUIREMENT		9. MIL. SPEC. NO.		10. NAME/DESIGNATION	
MAC				3900					
11. TEST CODE		12.		13.		14.		15. SAMPLING TIMES	
ITEM NO.									
6	HSQ	DeminerIALIZED Water		MMS 606, PSL2302, 20530, PB 10-81		1. Filterable solids Particulate 10-25 microns 25-50 microns 50-100 microns 100-300 microns 300 up Total solids Specific Conductance Appearance - clear, colorless liquid Boiling PT - 74.8 Deg F at 1 ATM Boiling Range - (5 to 85% distilled) - 0.5 Deg F Soluble Residue (ppm by wt., max) - 2 Chloride Ion (ppm wt., max) - Nil Moisture content (ppm by wt., max) -10		1 as required per applicable operation requirements document.	
7	HSQ	Freon MF (Trichloromonofluoromethane)		Dupont Specifications Filtered through 2 Micron Filter				One time requirement - two week notice	

CHEMICAL AND PHYSICAL ANALYSIS											
Fuel Cell Exp			1. SECURITY CLASSIFICATION			2. PAGE 540.4			3. DATE 18 May 1966		
5. PROGRAM TITLE			7. SYSTEM CODE			8. CONTRACTOR			4. REPLACES PAGE(S)		
TIII SLS-MOL-HSQ			3900			MC			DATED		
10. ITEM NO.	11. TEST CODE	12. NAME/DESIGNATION	13.	14. MIL. SPEC. NO.	15. DETAILS OF ANALYSIS REQUIRED	15. SAMPLING TIMES					
1	HSQ (K)	Gaseous Hydrogen			1. Percent Purity 2. Oxygen 3. Water 4. Carbon Bearing Gases 5. Inert Gases 6. Nitrogen 1. Percent Purity 2. Water 3. Carbon Bearing Gases 4. Inert Gases 5. N ₂ O Total filterable solids shall not exceed 2.5 milligrams per 100 grams of gas. Partical size shall be in accordance with the following: <div style="display: flex; justify-content: space-between;"> <div> <p>Size (Micron)</p> <p>Solids</p> <p>Filters</p> </div> <div> <p>0-300 300-500 500-1000 over 1000</p> <p>0-750x25 750-2000x25 2000-6000x40 over 6000</p> </div> <div> <p>Max No/100 gram Gas</p> <p>Unlimited 10 2 0</p> <p>Unlimited 20 2 0</p> </div> </div>	99.99% Min 10 PPM Max 10 PPM Max 10 PPM Max 60 PPM Max 150 PPM Max 99.99% Min 10 PPM Max 10 PPM Max 45 PPM Max 2 PPM Max			Prior to loading K-bottles Prior to loading K-bottles		
2	HSQ (K)	Gaseous Oxygen									

CHEMICAL AND PHYSICAL ANALYSIS				1. SECURITY CLASSIFICATION		2. PAGE 540.5	
HTTC				UNCLASSIFIED		3. DATE 18 May 1966	
5. PROGRAM TITLE				8. CONTRACTOR		4. REPLACES PAGE(S)	
TIII SLS/MOL-HSQ						-- None --	
10. ITEM NO.	11. TEST CODE	12. NAME/DESIGNATION	13. MIL. SPEC. NO.	14. DETAILS OF ANALYSIS REQUIRED	15. SAMPLING TIMES	DATED	
1	HSQ (CW)	Gaseous Nitrogen		a) Total filterable solids - 2.5 milligrams/100 gm. gas b) Solid particles & fibers: <div style="display: flex; justify-content: space-between;"> <div> solids fibers </div> <div> Size (microns) 0 - 300 300 - 500 500 - 1000 Over 1000 0 - 750 x 25 750 - 2000 x 25 2000 - 6000 x 40 Over 6000 </div> <div> #/100 gms. of gas unlimited 10 2 0 unlimited 20 2 0 </div> </div>	None		



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1. SECURITY CLASSIFICATION

(U)

2. REVISION NO. 1
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DOCUMENTARY PHOTOGRAPHY									
5. TEST PROGRAM				6. PROGRAM REQUIREMENT		7. SYSTEM CODE		8. CONTRACTOR	
TIII SLS/MOL-HSQ				NO. 3900				MAC	
10. ITEM NO.		11. TEST CODE	12. FILM SIZE MM	13. FILM TYPE	ITEM TO BE VIEWED OR COVERED		14. LOCATION	15. PURPOSE AND REMARKS	
1	ESQ	16	Color		Spacecraft/Component arrival at PAFB or CKAFS by airlift. Preparation for unloading, unloading operation, and visual inspection performed on the spot.		CKAFS/PAFB	For historical record and evaluation of all events and operations. Show all special equipment used, receiving/unloading procedures, equipment damage. Suggest one camera for main story and a second camera for inter-cuts, cutaway and insert shots.	
2		4X5 Stills	Color	B&W	Same as Item 1				
3		16	Color		Spacecraft/component receiving inspection, assembly system installation, ordnance testing, miscellaneous hangar checkouts and modifications, and vehicle roll-out.		Hangar L	For historical record and evaluation of all events and operations. Utilize "establishing" shots, cutaways, and insert shots.	
4		4X5 Stills	Color	B&W	Same as Item 3				
5		16	Color		Gemini vehicle, including overall exterior and close ups of the heat shield.		Hangar L	For comparison with post-flight condition.	
6		4X5 Stills	Color	B&W	Same as Item 5				
7	ESQ	16	Color		Spacecraft arrival at pad, erection, mating to launch vehicle/lab., unbllical hookup, and related special tests/operations.		Complex 40	For historical record and evaluation of operations. Desire complete film sequences of each individual operation.	

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1. SECURITY CLASSIFICATION
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9. REVISION NO.
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DOCUMENTARY PHOTOGRAPHY										1. SECURITY CLASSIFICATION		
5. TEST PROGRAM					6. PROGRAM REQUIREMENT		7. SYSTEM CODE		8. CONTRACTOR		9. SECURITY CLASSIFICATION	
TIII SLS/MOL-HSQ					NO. 3900				MAC		2. PAGE 579.1	
											3. DATE 1 April 1966	
											4. REPLACES PAGE 578	
											New Page	
											DATED	
											PURPOSE AND REMARKS	
											15.	
											14. LOCATION	
											13. ITEM TO BE VIEWED OR COVERED	
											12. FILM	
											11. TEST CODE	
											10. ITEM NO.	
											9. SIZE MM	
											8. TYPE	
8	HSQ	4x5 Still	Color B & W	Same as Item 7	Complex 40/VIB							
9		16	B & W	Edited film report of launch, showing miscellaneous spacecraft preparation, clearing pad, LCC interior during countdown, and actual launch								
10		16	Color	Launch area, centered on Spacecraft. Overall views and closeups of entire vehicle/Spacecraft on stand.	Complex 40							
11		4x5 Still	Color	Same as Item 10								
12		16	Color	Miscellaneous views of last minute preparations around launch area and in LCC.	Complex 40/VIB							
13		4x5 Still	Color B & W	Same as Item 12								
14		70	Color	Tracking Camera--Entire vehicle to fill frame at acquisition (first acquisition to limit of tracking)	Launch Area							
15		70	Color	Fixed Camera--Entire vehicle to fill frame (T-2 seconds to T+15 seconds).	Launch Area							
16	HSQ	16	Color	Tracking--entire vehicle coverage (first acquisition to film run-out or T+120 seconds)	Launch Area							

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1. SECURITY CLASSIFICATION

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REVISION NO. 1
MT 95

DOCUMENTARY PHOTOGRAPHY										1. SECURITY CLASSIFICATION		2. PAGE 579.2	
										U		3. DATE 1 April 1966	
										MAC		4. REPLACES PAGE(S)	
												DATED New Page	
5. TEST PROGRAM		TIII SLS/MOL-HSQ		6. PROGRAM REQUIREMENT NO. 3900		7. SYSTEM CODE		14. LOCATION		15. PURPOSE AND REMARKS			
10. ITEM NO.	11. TEST CODE	12. SIZE MM	13. FILM TYPE	ITEM TO BE VIEWED OR COVERED									
17	HSQ	16	Color	Launch vehicle and Spacecraft as viewed from a "Chase Aircraft" during early ascent portions of flight.			ETR Station 1		Evaluation of early flight.				
18		16	Color	Spacecraft recovery operations, including descent (if possible) attachment of flotation gear, attachment of slings, and removal from water.			Recovery Area		Document procedures/problems.				
19		4x5 Stills	Color B&W	Same as Item 18.									
20		16	Color	Arrival, inspection, transporting and testing of recovered spacecraft.			ETR Station 12		Engineering evaluation of flight effects.				
21	HSQ	4x5 Stills	Color B&W	Same as Item 20.									
<p>NOTE:</p> <p>Requirements listed on these pages are general requirements. Detailed requirements will be submitted on individual AFMTC Form 66's prior to need dates.</p>													

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1. SECURITY CLASSIFICATION

(U)

5. REVISION NO. 1
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NORMAL RECOVERY			1. SECURITY CLASSIFICATION		2. PAGE 710.2	
			U		3. DATE 1 April 1966	
			MAC		4. REPLACES PAGE(S) 710.2	
5. PROGRAM TITLE TIII SLS/MOL-HSQ			7. SYSTEM CODE		DATED	
6. PROGRAM REQUIREMENT CODE 3900			8. CONTRACTOR		TEST CODE: HSQ	
7A. SKETCHES, DIAGRAMS, ETC.						
<u>Fluorescein Sea Marker</u>						
<p>Dye marker will be located in a well in the bottom of the cylindrical section of the spacecraft. Upon landing of the spacecraft, the dye marker will be submerged and will leave a green-yellow streak in the wake of the spacecraft. The width and density of the dye marker streak are dependent upon wind and sea conditions. The lifetime of the dye marker will be approximately two to six hours, depending upon the sea state.</p>						
<u>Hazards and Remarks</u>						
<p>The Gemini spacecraft may contain hazardous pyrotechnics, hypergolic fuels and numerous high pressure systems. Detailed descriptions of these hazards as well as prescribed handling procedures will be furnished at a later date. Lifting slings, flotation safety devices and other specialized retrieval and handling gear will be provided by the Range User for this operation. Gemini spacecraft specialist will be provided by the Range User in the recovery area to perform the required post retrieval spacecraft operations.</p>						
<u>Spacecraft Return After Retrieval</u>						
<p>Since the location, retrieval, and evaluation of both the physical damage to the spacecraft heat shield and on-board telemetry data is essential to the accomplishment of primary mission objectives, the return of the spacecraft to CKAPS via aircraft is required within 6 calendar days of recovery. The aircraft should be capable of accommodating the spacecraft, the spacecraft handling equipment, the de-servicing kit, and approximately ten MAC personnel.</p>						
<u>Recovery Operations Requirements</u>						
<p>1. Flotation collar must be installed within 60 mins. (page 710, item 2), after impact.</p> <p>2. Ship support, including RIS, capable of retrieving the REM from any impact point in the planned recovery area within 6 to 8 hours. (see pages 820 and 820.1)</p>						
<u>Recovery Area</u> - The nominal impact point and flight azimuth of the REM are identified on page 145. The three sigma footprint area or recovery zone is expected to be rectangular in shape and 320 nautical miles long in a downrange direction and 22 nautical miles wide in a cross range direction. The center of the rectangle is 16.8 n. miles downrange of the impact point and 1.7 nautical miles cross range from the impact point in the direction of Ascension Island.						



S. PROGRAM TITLE				TIII SLS/MOL-HSQ		SALVAGE AND DISPOSITION		1. SECURITY CLASSIFICATION		2. PAGE 720	
11. TEST NO.		12. COMPONENT		13. WEIGHT - POUNDS		14. LOCATION		7. SYSTEM CODE		3. DATE 1 April 1966	
1. HSQ		Tape Recorder, PCM		13.9		Lower center console cabin.		6. PROGRAM REQUIREMENT CODE 3900		4. REPLACES PAGE(S) 720	
2		Tape Recorder, FM Analog		10.8		Right Hand Pallet.		8. CONTRACTOR		5. DATED	
3 HSQ		Over-all Spacecraft		Variable (up to 6000 pounds)		N/A		MAC		9. REVISION NO. 1	
<p>Retrieve tape recorder after an abort or catastrophic failure on the pad. Verify that all power is off. No retrieval attempt should be made until all danger of fire and explosion has been eliminated before attempting access to the interior of the spacecraft. The tape will provide information for analysis of the cause and/or effect of the failure.</p> <p>Retrieve tape recorder after an abort or catastrophic failure on the pad. These tapes will provide information for the analysis of the cause and/or effect of the failure. Special instructions and hazards same as Item 1.</p> <p>In the event of a mid-air explosion or separation of spacecraft sections on or in the immediate vicinity of the pad, work should be started as soon as practical to locate and collect as much of the spacecraft as possible. This search should be undertaken after emergency egress crews have completed their efforts and after Pad Safety has opened the pad to search crews. The extent of the search should be confined to retrieving parts or sections considered valuable in performing fault analysis.</p> <p>NOTE: All items should be delivered to McDonnell Aircraft Corp., Hangar L, CKAFS, for further disposition per USAF instructions.</p>											
<p>AFMTC FORM 37A NOV 61 PREVIOUS EDITION OF THIS FORM IS OBSOLETE.</p> <p>1. SECURITY CLASSIFICATION (U)</p> <p>2. PAGE 720</p> <p>3. DATE 1 April 1966</p> <p>4. REPLACES PAGE(S) 720</p> <p>5. DATED</p> <p>6. PROGRAM REQUIREMENT CODE 3900</p> <p>7. SYSTEM CODE</p> <p>8. CONTRACTOR</p> <p>9. REVISION NO. 1</p>											

HSQ SPACECRAFT		NON-RANGE AIRCRAFT		1. SECURITY CLASSIFICATION		2. PAGE 810	
5. PROGRAM TITLE		6. PROGRAM REQUIREMENT CODE		7. SYSTEM CODE		3. DATE 1 April 1966	
TIII SLS/MOL-HSQ		3900				4. REPLACES PAGE(S) 810	
11. FUNCTION AND PURPOSE		12. EQUIPMENT TO BE INSTALLED IN AIRCRAFT		13. NUMBER OF AIRCRAFT		14. AIRCRAFT FLYING HOURS/QUARTER	
1. RC-121 Aircraft (a) Skin track S/C during terminal portion of flight & pre-flight impact location. (b) Search		SARAH & ARA-25 homing receivers, or equivalent to home on the S/C recovery beacon. See notes 1 & 2		FY 65 CY 66 FY 67		FY 68	
2. HC-130H (a) Locate HSQ vehicle after landing. (b) Deploy swimmers and floatation gear		(a) Gemini floatation collar plus 1 spare (b) Gemini emergency floatation bag. (See note 2)		FY 65 CY 66 FY 67		FY 68	
1. ITEM NO.		1. ITEM		1. NUMBER OF AIRCRAFT		1. AIRCRAFT FLYING HOURS/QUARTER	
1		A. NUMBER OF AIRCRAFT B. NO. OF FLIGHTS/A/C C. FLIGHT DURATION-HOURS D. TOTAL FLYING HRS/UTR E. STATION F. FLIGHT PATH G. SPEED RANGE - KTS H. ALTITUDE - 1000 FT.		1		1 (Operational flight only)	
2		A. NUMBER OF AIRCRAFT B. NO. OF FLIGHTS/A/C C. FLIGHT DURATION-HOURS D. TOTAL FLYING HRS/UTR E. STATION F. FLIGHT PATH G. SPEED RANGE - KTS H. ALTITUDE - 1000 FT.		2		2*	
		A. NUMBER OF AIRCRAFT B. NO. OF FLIGHTS/A/C C. FLIGHT DURATION-HOURS D. TOTAL FLYING HRS/UTR E. STATION F. FLIGHT PATH G. SPEED RANGE - KTS H. ALTITUDE - 1000 FT.		12		12	
		A. NUMBER OF AIRCRAFT B. NO. OF FLIGHTS/A/C C. FLIGHT DURATION-HOURS D. TOTAL FLYING HRS/UTR E. STATION F. FLIGHT PATH G. SPEED RANGE - KTS H. ALTITUDE - 1000 FT.		5-10		5-10	

NOTES: 1. Equipment required to support this mission should be installed, maintained, and operated by USAF personnel.
2. Communication equipment should be such as to permit continuous voice contact with JC-130A Aircraft which are equipped with VHF (Collins 101) and UHF (ARC-34).

HSQ SPACECRAFT		NON-RANGE AIRCRAFT		1. SECURITY CLASSIFICATION		2. PAGE	
5. PROGRAM TITLE		6. PROGRAM NO. / ELEMENT CODE		7. SYSTEM CODE		8. DATED	
TIII SLS/MOL-HSQ		3900				810	
11. FUNCTION AND PURPOSE		12. EQUIPMENT TO BE INSTALLED IN AIRCRAFT		13. ITEM		14. NUMBER OF AIRCRAFT AND AIRCRAFT FLYING HOURS/QUARTER	
10. ITEM NO.							
1	RC-121 Aircraft (a) Skin track S/C during terminal portion of flight & predict impact location. (b) Search	SAHAR & ARA-25 homing receivers, or equivalent to home on the S/C recovery beacon. See notes 1 & 2					
2	HC-130H (a) Locate HSQ vehicle after landing. (b) Deploy swimmers and floatation gear	(a) Gemini floatation collar plus 1 spare (b) Gemini emergency floatation bag. (See note 2)					

NOTES:

- Equipment required to support this mission should be installed, maintained, and operated by USAF personnel.
- Communication equipment should be such as to permit continuous voice contact with JC-130A Aircraft which are equipped with VHF (Collins 101) and UHF (ARC-34).

* 1 Training exercise
1 Operation

HSQ SPACECRAFT		NON-RANGE AIRCRAFT		SECURITY CLASSIFICATION		PAGE 810.1	
PROGRAM TITLE		TIII SLS/MOL-HSQ		SYSTEM CODE		(U)	
FUNCTION AND PURPOSE		EQUIPMENT TO BE INSTALLED IN AIRCRAFT		ITEM		CY	
11.		12.		13.		14.	
10. ITEM NO.							
3	C-130 Aircraft (a) Transport personnel and recovery gear to recovery area. (b) Return recovered S/C and associated equipment to CKAFS	Standard		A. NUMBER OF AIRCRAFT			
				B. NO. OF FLIGHTS/A/C			
				C. FLIGHT DURATION - HOURS			
				D. TOTAL FLYING HRS/OTR			
				E. STATION			
				F. FLIGHT PATH			
				G. SPEED RANGE - KTS			
				H. ALTITUDE - 1000 FT.			
				A. NUMBER OF AIRCRAFT			
				B. NO. OF FLIGHTS/A/C			
				C. FLIGHT DURATION - HOURS			
				D. TOTAL FLYING HRS/OTR			
				E. STATION			
				F. FLIGHT PATH			
				G. SPEED RANGE - KTS			
				H. ALTITUDE - 1000 FT.			
				A. NUMBER OF AIRCRAFT			
				B. NO. OF FLIGHTS/A/C			
				C. FLIGHT DURATION - HOURS			
				D. TOTAL FLYING HRS/OTR			
				E. STATION			
				F. FLIGHT PATH			
				G. SPEED RANGE - KTS			
				H. ALTITUDE - 1000 FT.			

SEACRAFT REQUIREMENTS										1. SECURITY CLASSIFICATION		2. PAGE 820	
PROGRAM TITLE										(U)		3. DATE 1 April 1966	
TIII SLS/MOL-HSQ										MAC		4. REPLACES PAGE(S) 820	
5. TYPE AND FUNCTION										6. CONTRACTOR		DATED	
C-H-S-A1													
Gen. H. H. Arnold or													
Gen. Hoyt Vandenberg													
11. NO. OF OPERATIONS										1		2	
12. TOTAL TIME REQUIRED ON STATION										1		2	
13. MAXIMUM RANGE										1		2	
14. DESCRIPTION OF OPERATION										1		2	
Located downrange of AFETR station 9.1 to provide telemetry, metric, and meteorological data for a portion of the HSQ flight between stations 9.1 and 12.										1		2	
15. MAXIMUM SPEED										1		2	
16. TYPE AND FUNCTION										1		2	
CM-M-AV1										1		2	
Sword Knot or Coastal Crusader										1		2	
11. NO. OF OPERATIONS										2		2	
12. TOTAL TIME REQUIRED ON STATION										2		2	
13. MAXIMUM RANGE										2		2	
14. DESCRIPTION OF OPERATION										2		2	
Located near the predicted impact point of the spacecraft and is required to provide high quality telemetry data, monitor parachute deployment, and participate in Spacecraft recovery operations.										2		2	
15. MAXIMUM SPEED										2		2	
16. TYPE AND FUNCTION										2		2	
DD - Recovery										2		2	
11. NO. OF OPERATIONS										2		2	
12. TOTAL TIME REQUIRED ON STATION										2		2	
13. MAXIMUM RANGE										2		2	
14. DESCRIPTION OF OPERATION										2		2	
Two destroyers located in the impact foot-print area are required to:										2		2	
1. Participate in spacecraft recovery operations.										2		2	
2. Provide the capability of quickly delivering the recovered spacecraft to a U. S. port for off-loading.										2		2	
15. MAXIMUM SPEED										2		2	
33 Knots										2		2	
16. TYPE AND FUNCTION										2		2	
17. EQUIPMENT TO BE INSTALLED ON SEACRAFT										2		2	
1. TM receiving and recording equipment including a strip-out recorder to provide a real-time display of TM signal strength.										2		2	
2. Crane or beam capable of retrieving the S/C.										2		2	
3. SARAH or Ak-25 homing equipment or equivalent.										2		2	

SEACRAFT REQUIREMENTS										1. SECURITY CLASSIFICATION		2. PAGE 820.1	
										(U)		3. DATE 1 April 1966	
										MAC		4. REPLACES PAGE(S) New Page	
5. PROGRAM TITLE TIII SLS/MOL-HSQ										6. PROGRAM REQUIREMENT CODE 3900		7. SYSTEM CODE	
8. CONTRACTOR										9. CY		10. CY	
10. TYPE AND FUNCTION										11. NO. OF OPERATIONS		12. TOTAL TIME REQUIRED ON STATION	
A-O - Recovery and Refueling										1		2	
11. NO. OF OPERATIONS										1		2	
12. TOTAL TIME REQUIRED ON STATION										1		2	
13. MAXIMUM RANGE										1		2	
14. MAXIMUM SPEED										1		2	
15. MAXIMUM SPEED										1		2	
16. DESCRIPTION OF OPERATION										1		2	
An aviation oiler is required to:										1		2	
1. Keep destroyers fueled and serviced.										1		2	
2. Participate in spacecraft recovery operations.										1		2	
Standard.										1		2	
17. EQUIPMENT TO BE INSTALLED ON SEACRAFT										1		2	
10. TYPE AND FUNCTION										1		2	
11. NO. OF OPERATIONS										1		2	
12. TOTAL TIME REQUIRED ON STATION										1		2	
13. MAXIMUM RANGE										1		2	
14. MAXIMUM SPEED										1		2	
15. MAXIMUM SPEED										1		2	
16. DESCRIPTION OF OPERATION										1		2	
17. EQUIPMENT TO BE INSTALLED ON SEACRAFT										1		2	
10. TYPE AND FUNCTION										1		2	
11. NO. OF OPERATIONS										1		2	
12. TOTAL TIME REQUIRED ON STATION										1		2	
13. MAXIMUM RANGE										1		2	
14. MAXIMUM SPEED										1		2	
15. MAXIMUM SPEED										1		2	
16. DESCRIPTION OF OPERATION										1		2	
17. EQUIPMENT TO BE INSTALLED ON SEACRAFT										1		2	

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1. SECURITY CLASSIFICATION

(U)

9. REVISION NO.

1


[illegible]

RANGE AIRCRAFT										1 SECURITY CLASSIFICATION		(U)		2. PAGE 040-1					
5. PROGRAM TITLE										6. PROGRAM REQUIREMENT CODE		7. SYSTEM CODE		3. DATE 1 April 1966					
TIII SLS/MOL-HSQ										3900		8. CONTRACTOR		4. REPLACES PAGE(S) New Page					
10. ITEM NO.										11. FUNCTION AND PURPOSE									
2										(a) Transport TM and metric data tapes from Sta.# 3, 7, 9.1 and RIS to CKAFS									
12. EQUIPMENT TO BE INSTALLED IN AIRCRAFT										13. ITEM									
Standard										A. NUMBER OF AIRCRAFT									
										B. NO. OF FLIGHTS/A/C									
										C. FLIGHT DURATION-HOURS									
										D. TOTAL FLYING HRS/QTR									
										E. STATION									
										F. FLIGHT PATH									
										G. SPEED RANGE - KTS									
										H. ALTITUDE - 1000 FT.									
										A. NUMBER OF AIRCRAFT									
										B. NO. OF FLIGHTS/A/C									
										C. FLIGHT DURATION-HOURS									
										D. TOTAL FLYING HRS/QTR									
										E. STATION									
										F. FLIGHT PATH									
										G. SPEED RANGE - KTS									
										H. ALTITUDE - 1000 FT.									
										A. NUMBER OF AIRCRAFT									
										B. NO. OF FLIGHTS/A/C									
										C. FLIGHT DURATION-HOURS									
										D. TOTAL FLYING HRS/QTR									
										E. STATION									
										F. FLIGHT PATH									
										G. SPEED RANGE - KTS									
										H. ALTITUDE - 1000 FT.									
15. REMARKS																			

DATA PROCESSING AND DISPOSITION												1. SECURITY CLASSIFICATION		2. PAGE 910	
5. PROGRAM TITLE TIII SLS/MOL-HSQ												(U)		3. DATE 18 May 1966	
6. PROGRAM REQUIREMENT CODE 3900												8. CONTRACTOR All		4. REPLACES PAGE(S) 910	
7. SYSTEM CODE														DATED	
10. ITEM NO.	11. TEST CODE	12. DATA	13. REFERENCE		14. QTY	15. FINAL RECIPIENT	16. TIME REQ'D.	17. DESIRED DATA PRESENTATION & REMARKS							
			PAGE NUMBER	ITEM NO.	ORIG	CYS			1	2	3	4			
1	HSQ	LAB TLM	230	1,2		4	6555th ATW Project Office	24H	X	X					
2	HSQ	GEM TLM	230	3		3		2H	X						
3	HSQ	Metric Data	210-215			4		4H	X						
4	HSQ	Eng. Seq. Data	220			3		24H		X					
5	HSQ	Meteorological	310-350			2		2H	X						
6	HSQ	Communications Recordings	412.1			2		2H	X						
7	HSQ	Documentary Photg.	570			5		24H		X					

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1. SECURITY CLASSIFICATION (U)

9. REVISION NO 1

DATA PROCESSING AND DISPOSITION										1. SECURITY CLASSIFICATION		2. PAGE 910.1	
3. PROGRAM TITLE TIII SLS/MOL-HSQ										Unclassified		3. DATE 18 May 1963	
6. PROGRAM REQUIREMENT CODE 3900										8. CONTRACTOR MC		4. REPLACES PAGE(S)	
7. SYSTEM CODE										DATED			
10. ITEM NO.	11. TEST CODE	12. DATA	13. REFERENCE PAGE NUMBER	14. QTY ITEM NO.	15. FINAL RECIPIENT	16. TIME REQ'D.	17. DESIRED DATA PRESENTATION & REMARKS						
1	BX MMD	Decommutate all channels assigned to AFCRL MMD and put in digital format with the appropriate clock data so that the data can be referenced to Universal Time. The above information should be combined on magnetic tape. The output channels from each detector should have the appropriate clock data for the particular commutator from which they were obtained.			Air Force Cambridge Research Labs L.G. Hanscom Field Bedford, Mass. Attn: S. Crest (CREM)								
2	AX ZG IG	Tank #1 gauge, tank #2 gauge, Tank #1 press, tank #2 pressure, Flowmeter, Temp #1, Temp #2		2	J. Lee Acoustica Associates, Inc. Los Angeles, Calif.	L +7w x	Sanborne recordings, decommutated Digital computer data (PCM). Format to be determined.						
3	DX BioC	Internal Battery Voltage, Temp., photo cell output	230 Ref prev. page	2	HQ AMD Brooks AFB, Texas Attn: Maj.L.A. Irvine	L +7w x							
4	HSQ HTTC Boost	Thermocouple Meas (ID)	230	2	Thompson Ramo Woolridge Equipment Lab. 23555 Euclid Ave. Cleveland, Ohio Attn: R. A. McKinnon	24 hr.	To be supplied						

AFMTC FORM NOV 61 39 PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.



1. SECURITY CLASSIFICATION

(U)


3. REVISION NO.

1

DATA PROCESSING AND DISPOSITION										1. SECURITY CLASSIFICATION		2. PAGE 910, 12	
3. PROGRAM TITLE TIII SLS/MOL-HSQ										Unclassified		3. DATE 18 May 1963	
6. PROGRAM REQUIREMENT CODE 3900										8. CONTRACTOR MC		4. REPLACES PAGE(S)	
7. SYSTEM CODE												DATED	
13. REFERENCE										14. QTY		15. FINAL RECIPIENT	
12. DATA										14. ORIS		15. CYS	
11. TEST CODE										13. PAGE NUMBER		14. TIME REQ'D.	
10. ITEM NO.										13. ITEM NO.		14. TIME REQ'D.	
9. DESIRED DATA PRESENTATION & REMARKS										13. ITEM NO.		14. TIME REQ'D.	
5	HSQ HTTC Boost	Pressure transducer meas (6)	230	2	Thompson Ramo Woolridge Equipment Lab. 23555 Euclid Ave. Cleveland, Ohio Attn: R. A. McKinnon	L +7w	x	To be supplied					
6	CX	Thermocouple Meas (39) Pressure Meas (6) Accelerometers (3)	230	2	"	L +7w	x	"					
			230	2	"	L +7w	x	"					

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PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.



1. SECURITY CLASSIFICATION (U)

5. REVISION NO. 1

DATA PROCESSING AND DISPOSITION														1. SECURITY CLASSIFICATION		2. PAGE 910.3	
5. PROGRAM TITLE		TIII SLS/MOL-HSQ		6. PROGRAM REQUIREMENT		7. SYSTEM CODE		8. CONTRACTOR		MAC		3. DATE April 1966		4. REPLACES PAGE(S)		New Page	
10. ITEM NO.	11. TEST CODE	12. DATA	13. REFERENCE	14. QTY	15. FINAL RECIPIENT	16. TIME REQ'D.	17. DESIRED DATA PRESENTATION & REMARKS										
			PAGE NO.	ITEM NO.	ORIG	CYS											
1	HSQ	Position	211	1		1	McDonnell/CKAFS	3CD	X								Magnetic Tape - Final. Tape format shall accompany tape.
2		Velocity	211	2		2	McDonnell/CKAFS	3CD	X								Tabular printouts - Final
						1	McDonnell/CKAFS	3CD	X								Magnetic Tape - Final Tape format shall accompany tape.
						2	McDonnell/CKAFS	3CD	X								Tabular printout - final
3		Acceleration	211	3		1	McDonnell/CKAFS	3CD	X								Magnetic Tape - Final. Tape format shall accompany tape.
4		Special Parameters	211.1	4		2	McDonnell/CKAFS	3CD	X								Tabular printout - Final.
						1	McDonnell/CKAFS	3CD	X								Magnetic Tape - Final. Tape format shall accompany tape.
5		Launch Vehicle Attitude, Pitch & Yaw	211.2	5		2	McDonnell/CKAFS	3CD	X								Tabular printout - Final
6		Quick Look PVA	211.2	6		1	McDonnell/CKAFS	1CD	X								Mag. tape & printout. See Note page 211.2
7		Position	212	1		1	McDonnell/CKAFS	3CD	X								Magnetic Tape - Final (See Note page 212). Tape format shall accompany tape.
						2	McDonnell/CKAFS	3CD	X								Tabular Printout - Final
8	HSQ	Velocity	212	2		1	McDonnell/CKAFS	3CD	X								Magnetic Tape - Final (See note page 212).



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1. SECURITY CLASSIFICATION

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9. REVISION NO.

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DATA PROCESSING AND DISPOSITION										1. SECURITY CLASSIFICATION		2. PAGE 910.4	
5. PROGRAM TITLE										(U)		3. DATE 1 April 1966	
6. PROGRAM REQUIREMENT										7. SYSTEM CODE		4. REPLACES PAGE(S)	
8. CONTRACTOR										MAC		5. NEW PAGE	
9. PROGRAM REQUIREMENT										10. QTY		11. TIME REQ'D.	
12. DATA										13. REFERENCE		14. ORIG	
15. ITEM NO.										16. PAGE NUMBER		17. TIME REQ'D.	
18. DATA										19. ORIG		20. TIME REQ'D.	
9	HSQ	Acceleration	212	3	2	McDonnell/CKAFS	3CD	X		Tape format shall accompany tape. Tabular Printout - Final			
10		Special Parameters	212	4	1	McDonnell/CKAFS	3CD	X		Magnetic Tape - Final (See Note page 212). Tape format shall accompany tape.			
11		Best Estimate of Trajectory	210.1	7	2	McDonnell/CKAFS	3CD	X		Tabular printout - Final			
12		Position	214	1	1	McDonnell/CKAFS	3CD	X		Magnetic Tape - Final. Tape format shall accompany tape.			
13		Velocity	214	2	2	McDonnell/CKAFS	3CD	X		Tabular printout - Final			
14	HSQ	Acceleration	214	3	2	McDonnell/CKAFS	3CD	X		Magnetic Tape - Final. Tape format shall accompany tape.			
					2	McDonnell/CKAFS	3CD	X		Tabular Printout - Final			

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1. SECURITY CLASSIFICATION

5. REVISION NO.

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DATA PROCESSING AND DISPOSITION													1. SECURITY CLASSIFICATION		2. PAGE 910.5	
5. PROGRAM TITLE TIII SLS/MOL-HSQ													(U)		3. DATE 1 April 1966	
6. PROGRAM REQUIREMENT CODE 3900													8. CONTRACTOR		4. REPLACES PAGE(S)	
7. SYSTEM CODE													MAC		DATED New Page	
10. ITEM NO.	11. TEST CODE	12. DATA	13. REFERENCE	14. QTY	15. FINAL RECIPIENT	16. TIME REQ'D.	17. DESIRED DATA PRESENTATION & REMARKS									
			PAGE NO.	ITEM NO.	ORIG	CYS										
15	HSQ	Special Parameters	214	4		1	McDonnell/CKAFS	3CD	X			Magnetic Tape - Final. Tape format shall accompany tape.				
16		Aerodynamic Parameters	214	5		2	McDonnell/CKAFS	3CD	X			Tabular Printout - Final				
17		Quick Look PVA	214	6		1	McDonnell/CKAFS	1CD	X			See Note 3, Page 214 Mag. tape & printout				
18		Telemetry (Launch Vehicle Vibration & Acoustics)	230	1		2	McDonnell/CKAFS	3CD	X			Tabular printout				
19		Telemetry	230	2		2	McDonnell/CKAFS	3CD	X			Plots.				
20		Telemetry (Spacecraft)	230	3		2	McDonnell/CKAFS	3CD	X			Tabular Printouts.				
21		Telemetry (Recorders on-board spacecraft)	240	1	2	0	McDonnell/CKAFS	6CD	X			Magnetic Tape with format. Two copies from recording station is required.				
22		Radar AGE & Signal Strength Recordings	240	2		1	McDonnell/CKAFS	3CD	X			See Page 710.2 "Spacecraft Return After Retrieval".				
23	HSQ	Telemetry Signal Strength, Deviation, & Center Frequency	240	3		1	McDonnell/CKAFS	3CD	X			Oscillograph or analog strip charts. - one per tracking station.				
													1. SECURITY CLASSIFICATION		9. REVISION NO.	
													(U)		1	



DATA PROCESSING AND DISPOSITION										1. SECURITY CLASSIFICATION		2. PAGE 910.6	
5. PROGRAM TITLE										(U)		3. DATE 1 April 1966	
6. PROGRAM REQUIREMENT										7. SYSTEM CODE		4. REPLACES PAGE(S)	
8. CODE 3900										9. CONTRACTOR		New Page	
12. DATA										13. REFERENCE		14. QTY	
11. TEST CODE										15. ITEM NO.		16. TIME REQ'D.	
17. DESIRED DATA PRESENTATION & REMARKS										18. ORIGIN		19. DATE	
24	HSQ	Preliminary Test Report	240	4	3	McDonnell/CKAFS	2H	X	Standard AFETR Format.				
25		Recovery Report	240	5	3	McDonnell/CKAFS	15WD	X	Standard AFETR Format.				
26		Quick Look Impact Prediction	240	6	2	McDonnell/CKAFS	2H	X	Tabular printout				
27		Extracts - TLM Station Operators Logs	240.1	7	1	McDonnell/CKAFS	3CD	X	AFETR Format - One per station				
28		Extracts - Radar operators Logs	240.1	8	1	McDonnell/CKAFS	3CD	X	AFETR Format - One per station				
29		Weather Forecasts	310	All	1	McDonnell/CKAFS	1CD	X	AFETR Format				
30		Weather Observations	320	All	1	McDonnell/CKAFS	3CD	X	Tabular Printout				
31		Weather Observations	320.1	4	1	McDonnell/CKAFS	3CD	X	Tabular Printout				
32	HSQ	Engineering Sequential	220	All	1	McDonnell/CKAFS	3CD	X	Tabular Printout				
					1	McDonnell/CKAFS	12H	X	Black and white				
					2	McDonnell/CKAFS	2WD	X	Color corrected. Quick process for early engineering evaluation. Retain timing on all movie film. Mark containers with location, camera, film speed and lens.				



AFATC FORM 39 NOV 61 PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

1. SECURITY CLASSIFICATION (U)

2. REVISION NO.

DATA PROCESSING AND DISPOSITION										1. SECURITY CLASSIFICATION		2. PAGE 91.7	
5. PROGRAM TITLE TIII SLS/MOL-HSQ										(U)		3. DATE 1 April 1966	
6. PROGRAM REQUIREMENT CODE 3900										8. CONTRACTOR MAC		4. REPLACES PAGE(S) DATED New Page	
10. ITEM NO.	11. TEST CODE	12. DATA	13. REFERENCE PAGE NUMBER	14. QTY ORIG	15. CYS	16. FINAL RECIPIENT	17. TIME REQ'D.	18. DESIRED DATA PRESENTATION & REMARKS	19. X	20. X	21. X	22. X	
33	HSQ	Telemetry Recordings - Prelaunch tests	240.1 10	1		McDonnell/CKAFS	2H	Magnetic Tape.					
34		Voice Recordings of MOPS/MITOC	412 3	2		McDonnell/CKAFS	15WD X	Magnetic Tape. In the event of difficulties during tests conducted during launch count-down, recordings of selected channels may be requested within 3CD.					
35		Voice Recordings of Radio Communications	412 1&2	2		McDonnell/CKAFS	15WD X	Magnetic Tape. See Note 1, page 412.					
36		TV Recordings	435 1	1		McDonnell/CKAFS	15WD X	Magnetic Tape. See Note 3, page 435.					
37		Documentary Photography	570 thru 570.2 All			McDonnell/CKAFS	15WD	Exact number of copies required and other pertinent information will be supplied on the AFMTC Form 66 submitted prior to each test.	X				
38		QLAP Guidance Parameters	240.1 11	3		McDonnell/CKAFS	8CD	Tabular printouts.		X			
39	HSQ	Quick Look PVA	212 1,2, &3	1		McDonnell/CKAFS	1CD X	Magnetic tape and tabular printout.					

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AFMTC

1. SECURITY CLASSIFICATION
(U)

3. REVISION NO.
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DRAWINGS - FACILITIES		1. SECURITY CLASSIFICATION		2. PAGE	
TIII SLS/MOL-HSQ		(U)		101	
3. PROGRAM SECURITY CODE		4. CONTRACTOR		5. DATE	
3900		MAC		April 1966	
6. PROGRAM SECURITY CODE		7. SYSTEM CODE		8. DATED	
3900		MAC		560	
9. DRAWING		10. DRAWING		11. DRAWING	
				Addendum No. 1 IFS-TIII-32000 (LC) READY BUILDING LAYOUT MCDONNELL AREA ENCLOSED BY HASH MARKS	

Approximate Scale
1/16" = 1'0"

WEST SIDE
COMPLEX 40
READY BUILDING



DRAWINGS - FACILITIES		1. SECURITY CLASSIFICATION (U)		2. PAGE 1011.1	
TIII SLS/MOL-HSQ		7. SYSTEM CODE 3900		3. DATE 1 April 1966	
6. PROGRAM REQUIREMENT CODE		9. CONTRACTOR MAC		4. REPLACES PAGE(S) New Page	
10. PROJECT NAME		11. MARKINGS (Do not use)		DATED	
TIII SLS/MOL-HSQ		Addendum No. 1 IFS-TIII-32000 Complex Support Building Layout			
TIII SLS/MOL-HSQ		MCDONNELL AREA ENCLOSED BY HASH MARKS			
TIII SLS/MOL-HSQ		Approximate Scale 1/16" = 1'0"			
TIII SLS/MOL-HSQ		SUPPORT BUILDING			
TIII SLS/MOL-HSQ		Stock Room			
TIII SLS/MOL-HSQ		Storage AGE			
TIII SLS/MOL-HSQ		101			
TIII SLS/MOL-HSQ		102			
TIII SLS/MOL-HSQ		103			
TIII SLS/MOL-HSQ		104			
TIII SLS/MOL-HSQ		105			
TIII SLS/MOL-HSQ		106			
TIII SLS/MOL-HSQ		107			
TIII SLS/MOL-HSQ		108			
TIII SLS/MOL-HSQ		109			
TIII SLS/MOL-HSQ		110			
TIII SLS/MOL-HSQ		111			
TIII SLS/MOL-HSQ		112			
TIII SLS/MOL-HSQ		113			
TIII SLS/MOL-HSQ		114			
TIII SLS/MOL-HSQ		115			
TIII SLS/MOL-HSQ		116			
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TIII SLS/MOL-HSQ					

OV-1		DRAWINGS - FACILITIES		1. SECURITY CLASSIFICATION UNCLASSIFIED		2. PAGE 1011.2	
3. PROGRAM TITLE TIII SLS/MOL-HSQ		6. PROGRAM REQUIREMENT CODE 3900		7. SYSTEM CODE		3. DATE 18 May 1966	
10. DRAWING		8. CONTRACTOR (GD/C) MC		9. DATED		4. REPLACES PAGE(S)	
A. CHECKOUT FACILITY (Item #1, P. 1010.1)						11. REFERENCES (Drawings)	
1. 20 ft. by 20 ft. room 8 ft. ceiling (minimum)							
2. Temperature controlled (70 ± 5 degrees)							
3. Filtered air (dust free area)							
4. Humidity 50% maximum							
5. Entrance 80 inches high by 72 inches wide (minimum)							
6. Two work benches							
7. Three 115 V 20 Amp circuits							

